

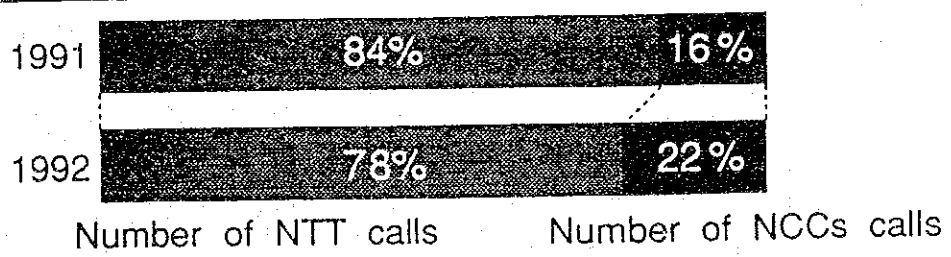
Objectives of Technology Development

1. To ensure the company's competitiveness
2. To offer the best, most reliable services for the telecommunications that have become such an important part of society's infrastructure

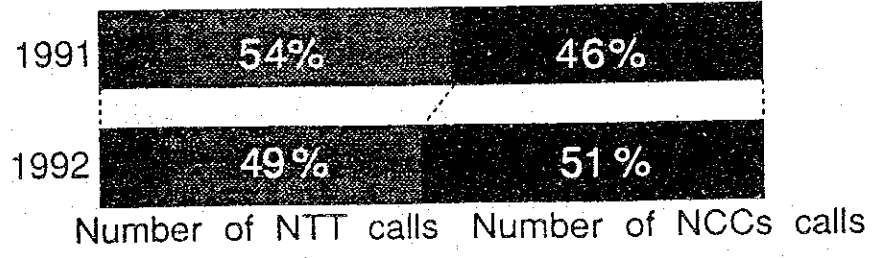


Market Share

Inter-Prefectural Services



Tokyo-Nagoya-Osaka corridor Services



4

Ensuring competitiveness

1. Development of new services/
integration of services
2. Improvement of service quality
3. Making work more efficient/
rational



NTT

5

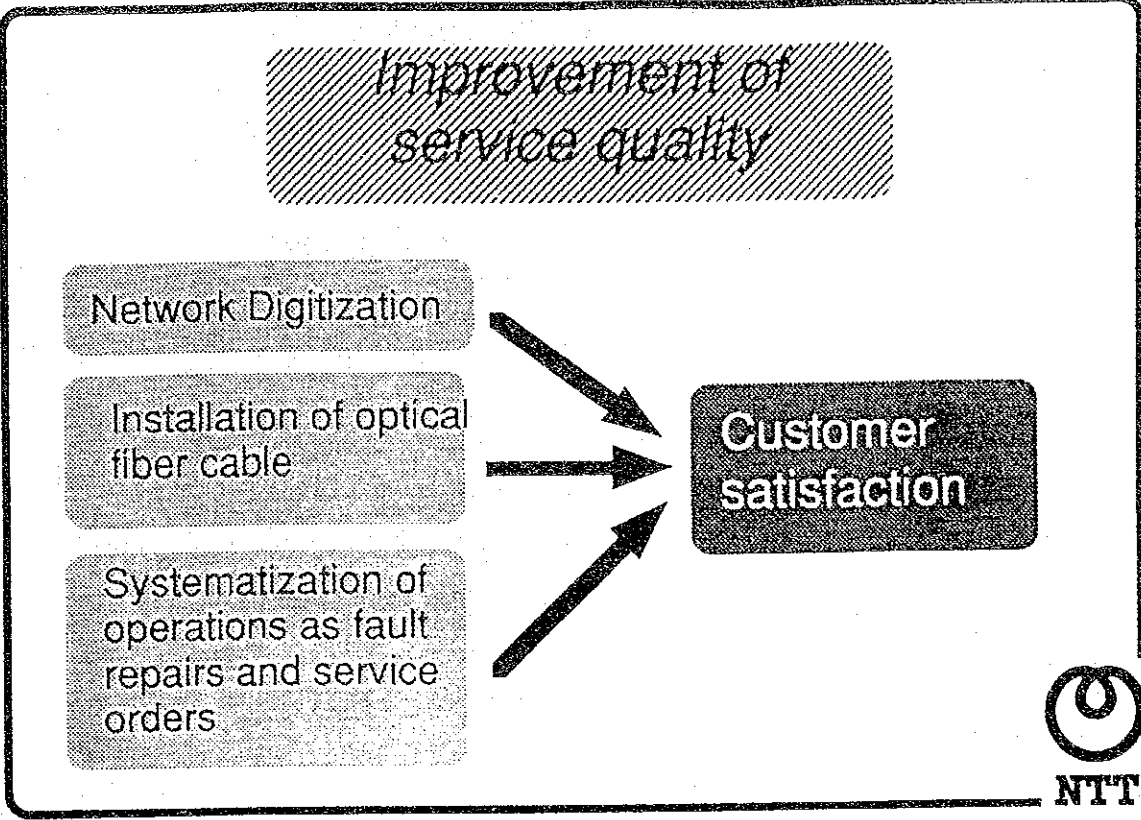
New Services

1. Free dial service
2. Dial Q² service
3. Tele-jyozu



NTT

6


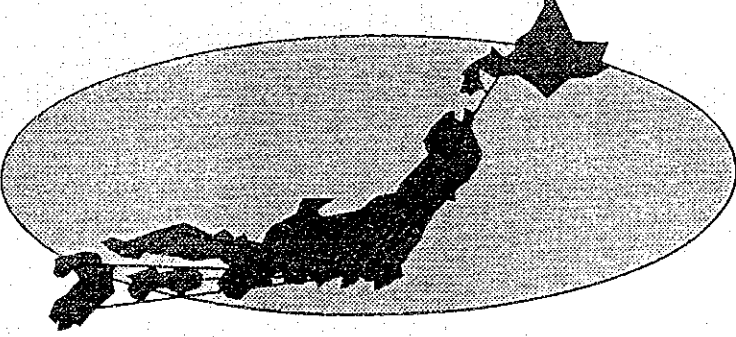


7

Network Management

The NTT Network Control center

The NTT Network Control Center monitors and controls all the country's telecommunications networks in realtime using front-end operation systems and tools to monitor the networks 24 hours a day in order to achieve 100% of their capabilities.



Corporate Mission

Our enterprise is dedicated to providing superior levels of service and reliability through the development of communications technology that reflects a global vision. By pursuing this goal, we will help to contribute toward a more fulfilling life and a more creative culture.



Duties of NTT

During the age of NTT public

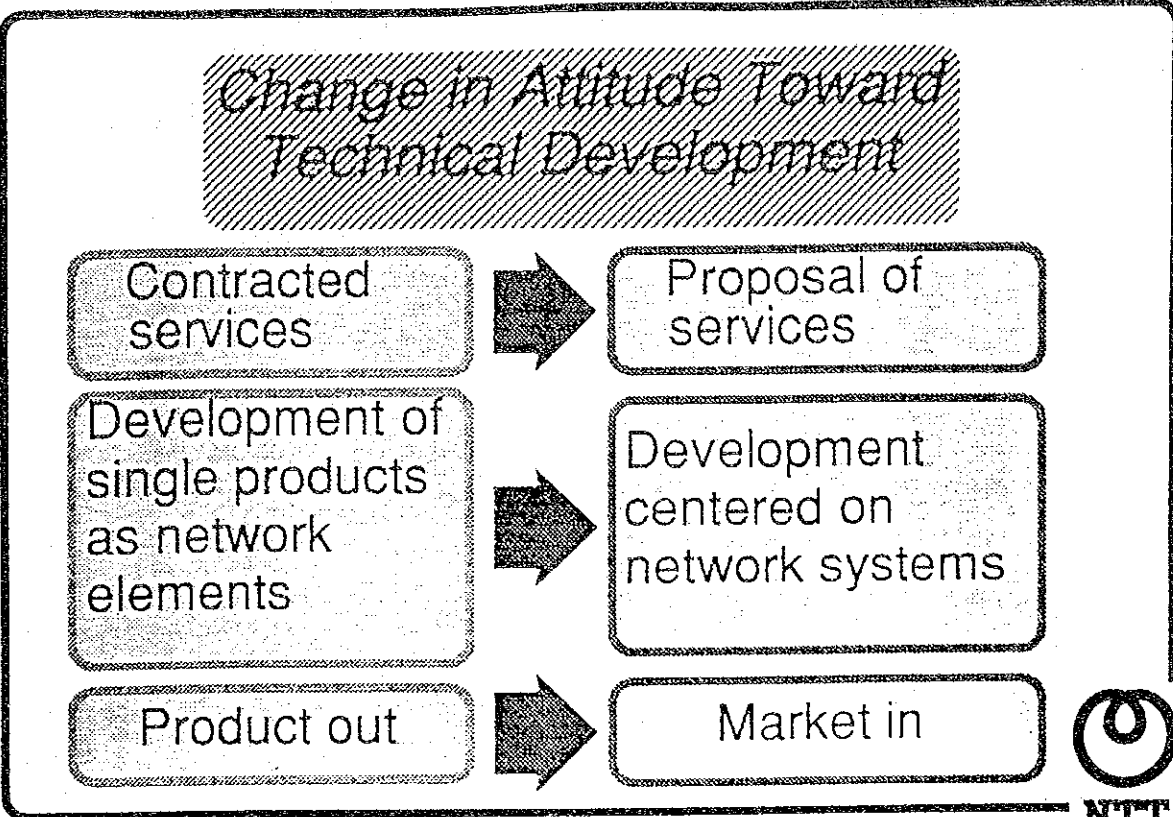
1. Telephones that would be available soon after subscription
2. Telephones that could reach any location within in the country



After privatization

1. NTT's responsibility is to fairly provide services under proper conditions, and to contribute to ensuring stable service throughout the country.





VI&P

Visual
service with images forming their core.

Intelligent
service which make it possible to locate and communicate with the called party wherever the person is and to obtain a wide variety of information .

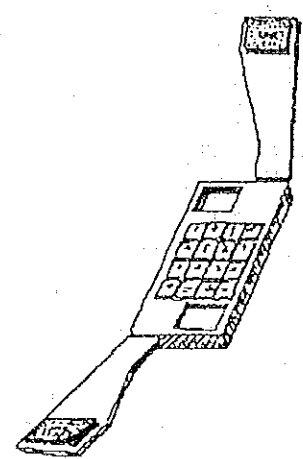
Personal
service that can specifically respond to the preference of individual customers.

NTT

Basic communications Services

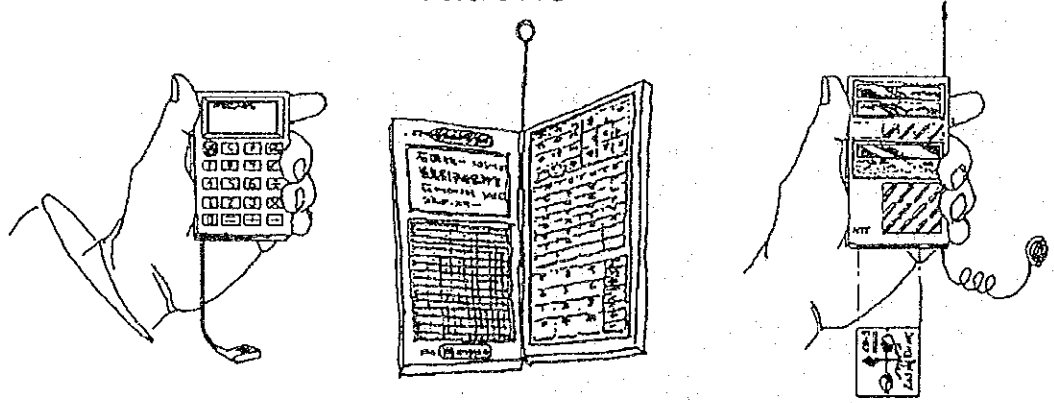
- 1. Telephone
- 2. Textmail
- 3. Visual Telephone

Pocket Telephone



Telephone Service

Telephone service is fundamental of voice communications

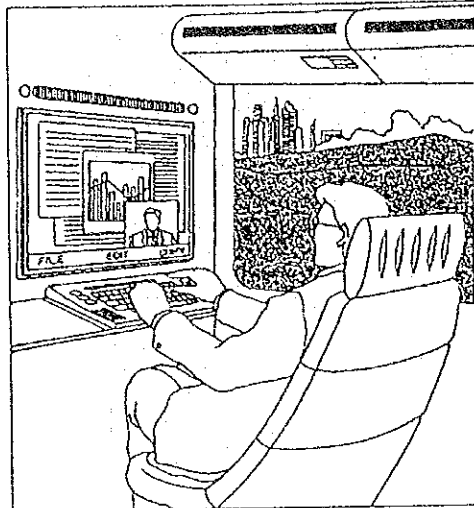


Examples of Pocket Telephones



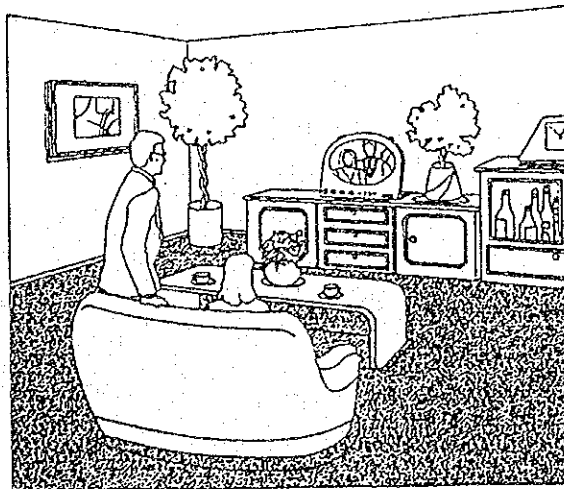
Textmail service

Textmail service is text communications by means of characters and still images.



Visual Telephone Service

Visual telephone service is image-based face-to-face communications.



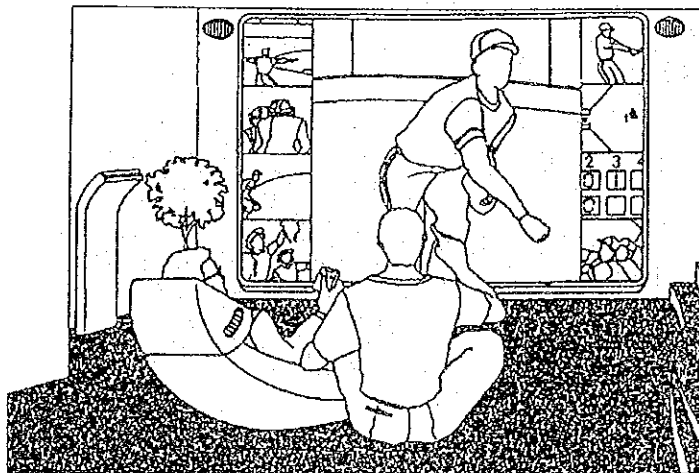
Advanced Communications Service of VI&P

1. Video communication Service
Ex. Multi-screen video communications
2. Intelligent Service
Ex. Translation communications
3. Personal Service
Ex. Selective reception service



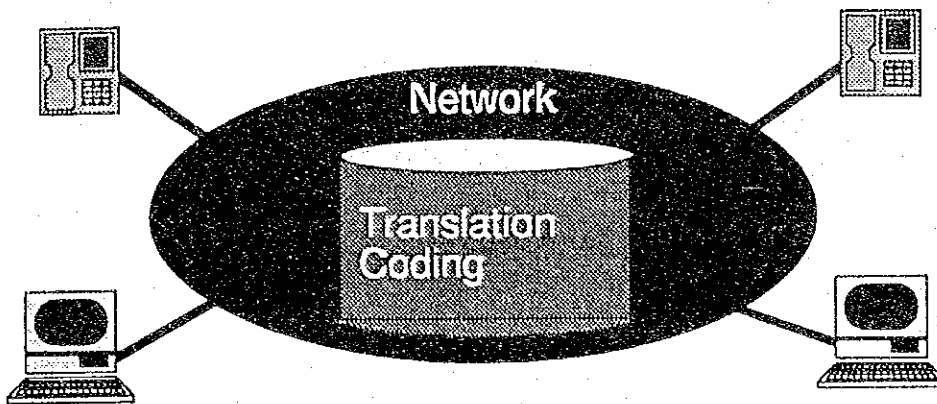
Video communication Service

Video communication Service is high definition video communications that can reproduce natural expressions and clear text and graphics.



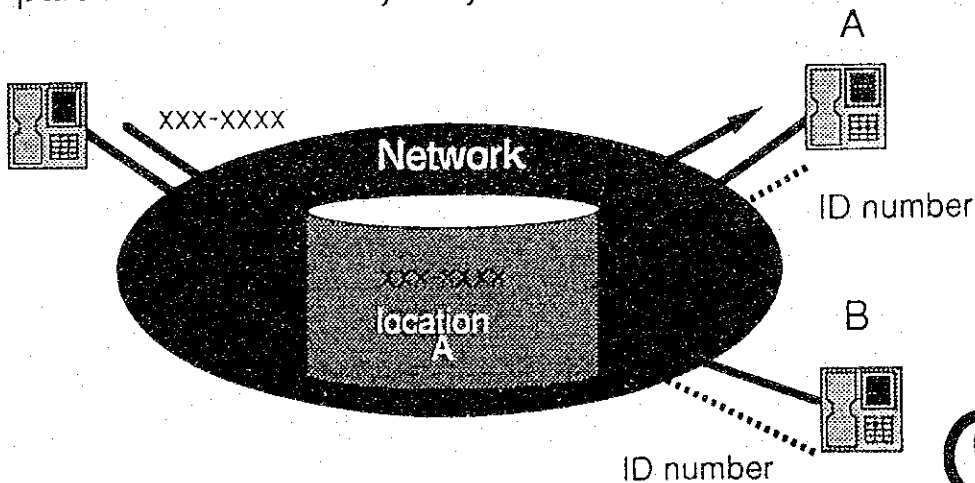
Intelligent Service

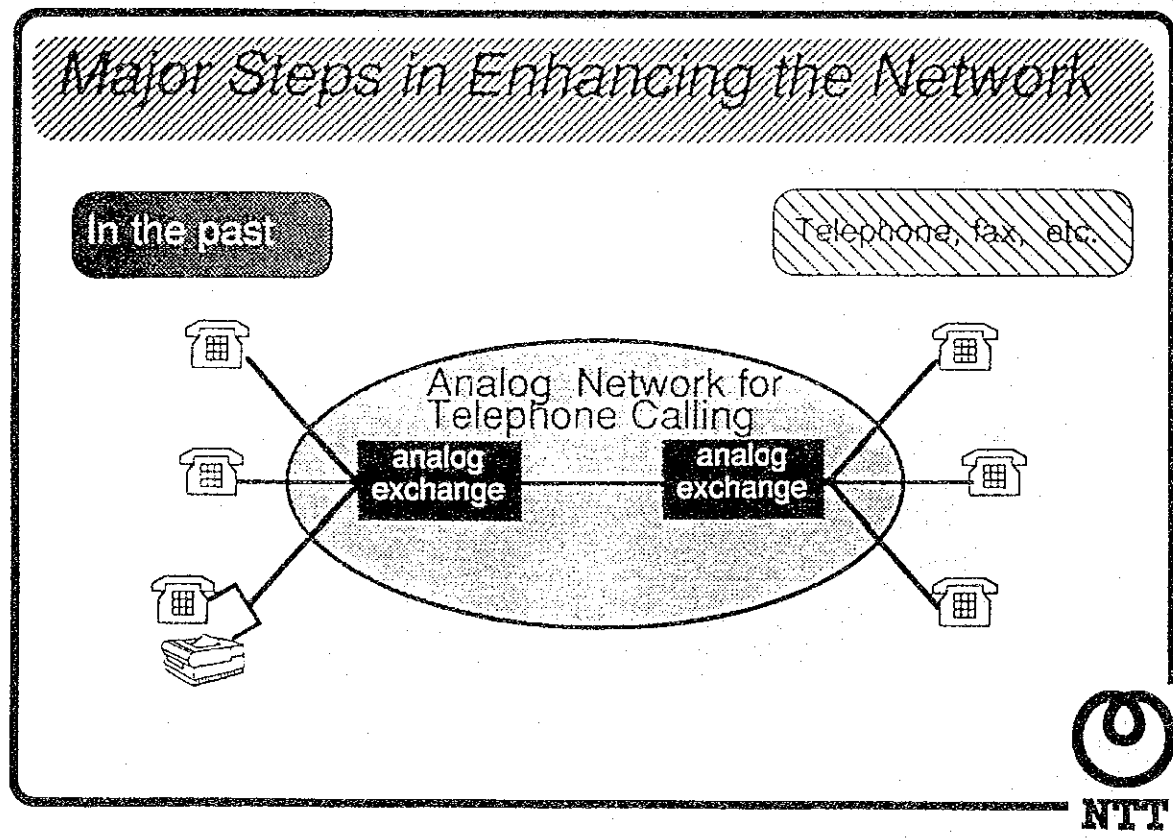
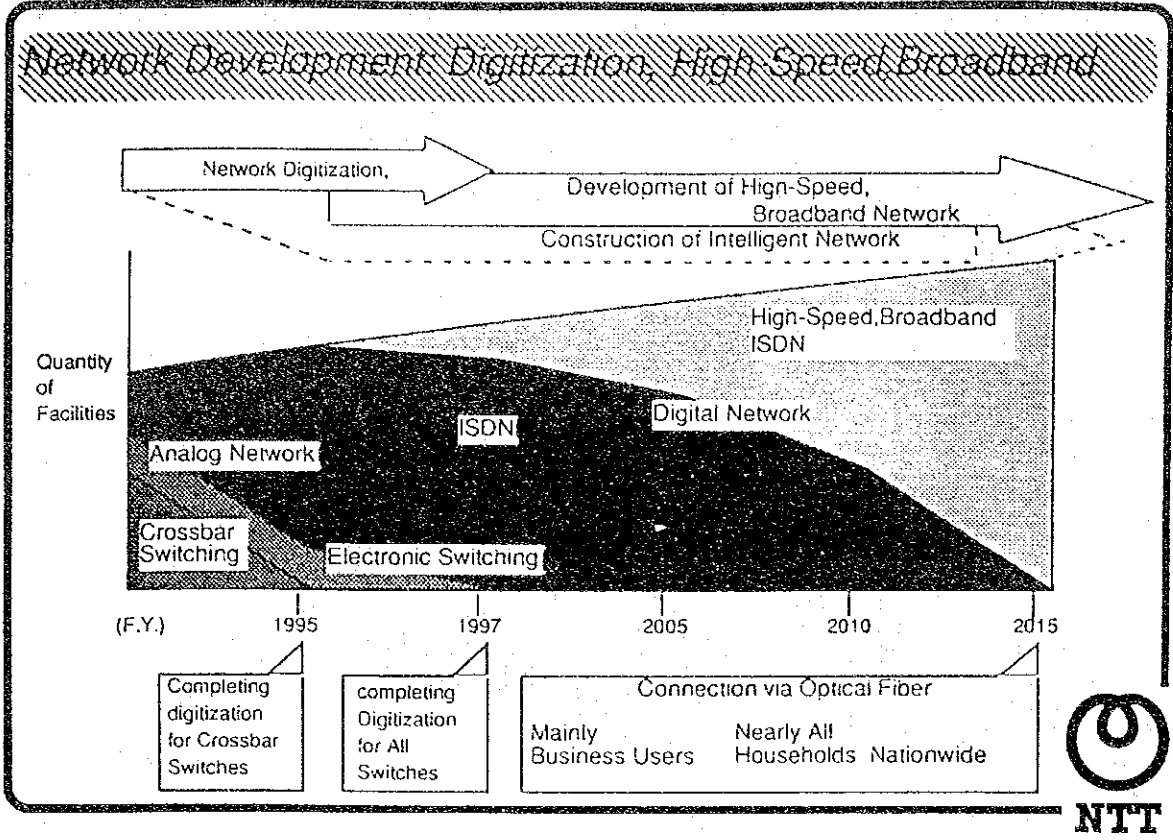
Intelligent service will be made available by adding advanced information processing functions to networks.

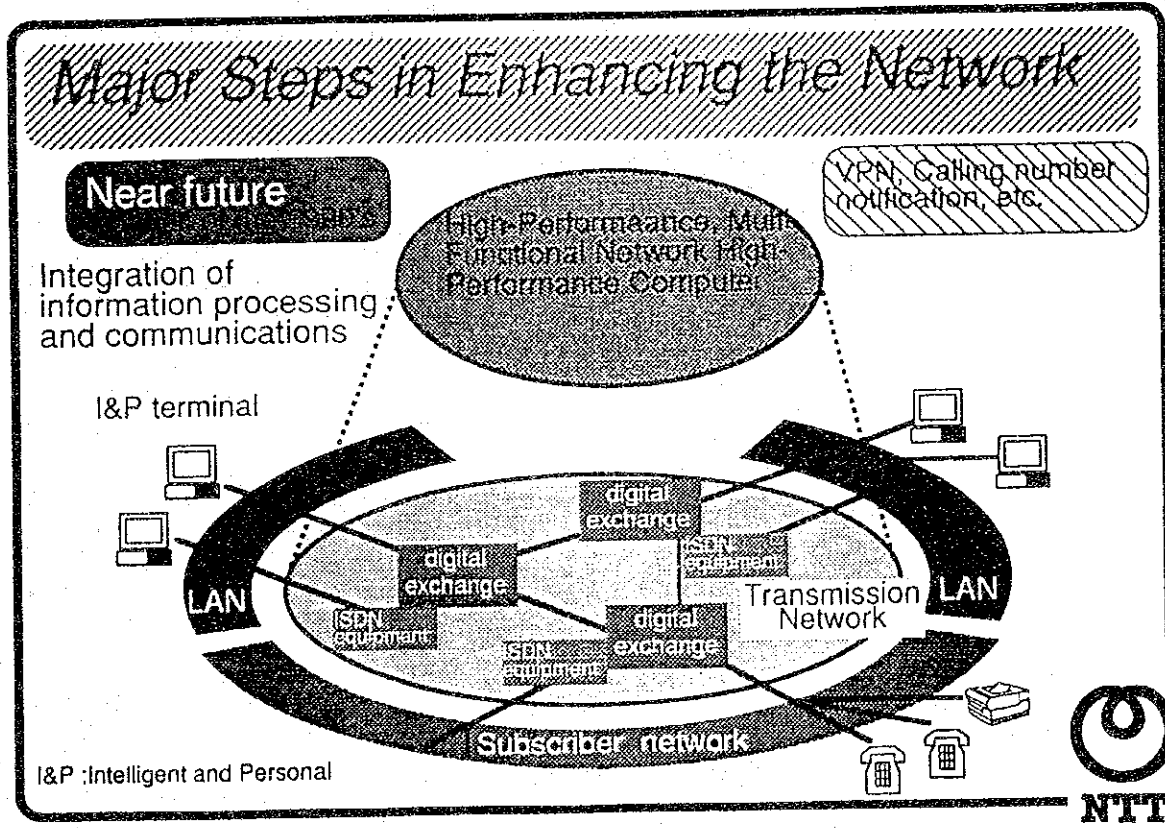
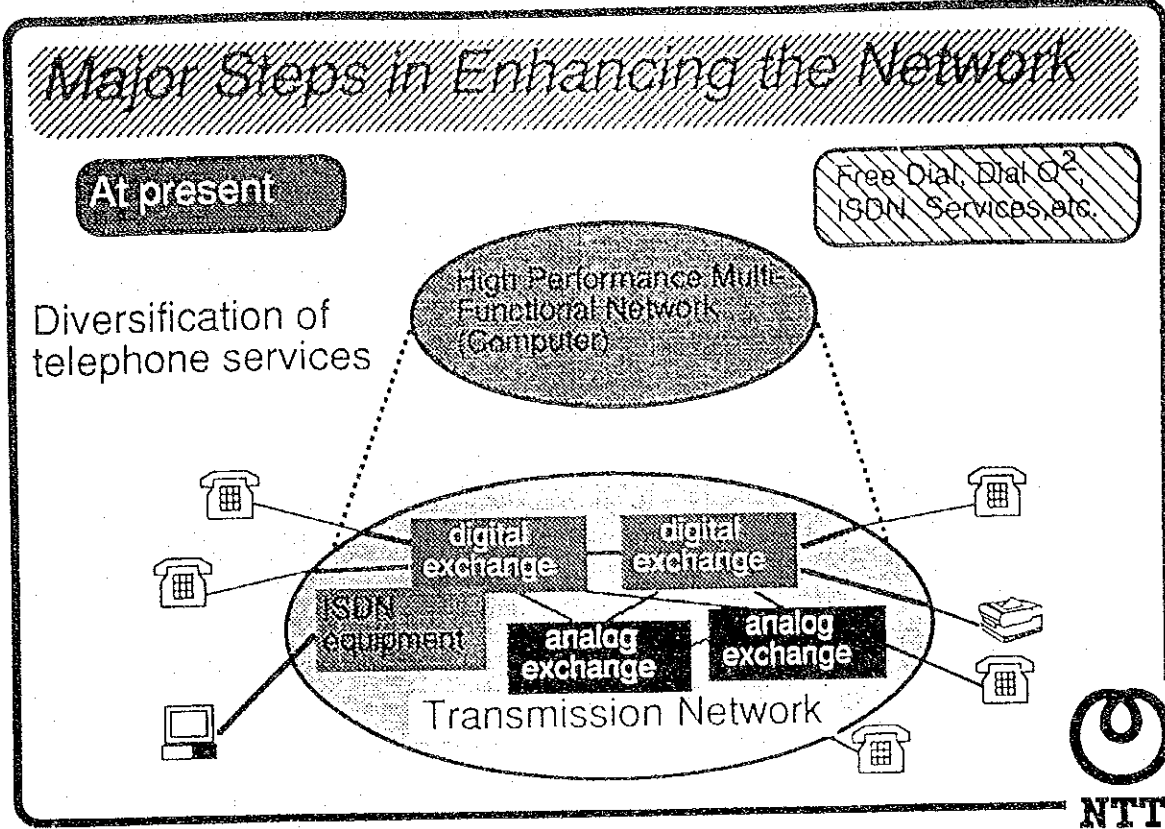


Personal Service

Personal service will use personal identification numbers to automatically forward calls to the called parties wherever they may be.



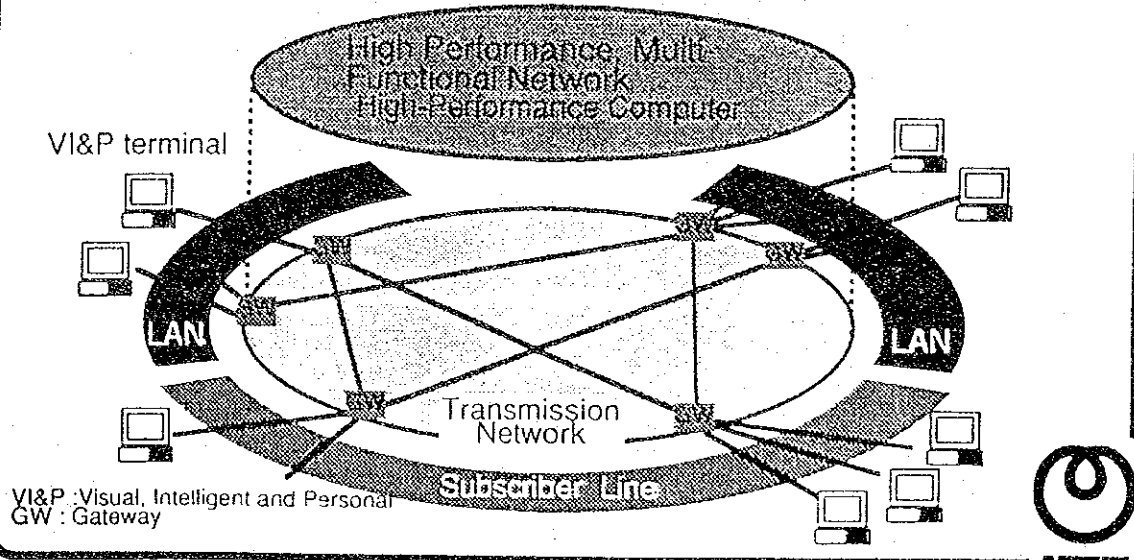




Major Steps in Enhancing the Network

Future
2000-2010

Providing full-scale visual communications
A variety of multimedia services including
high-quality images



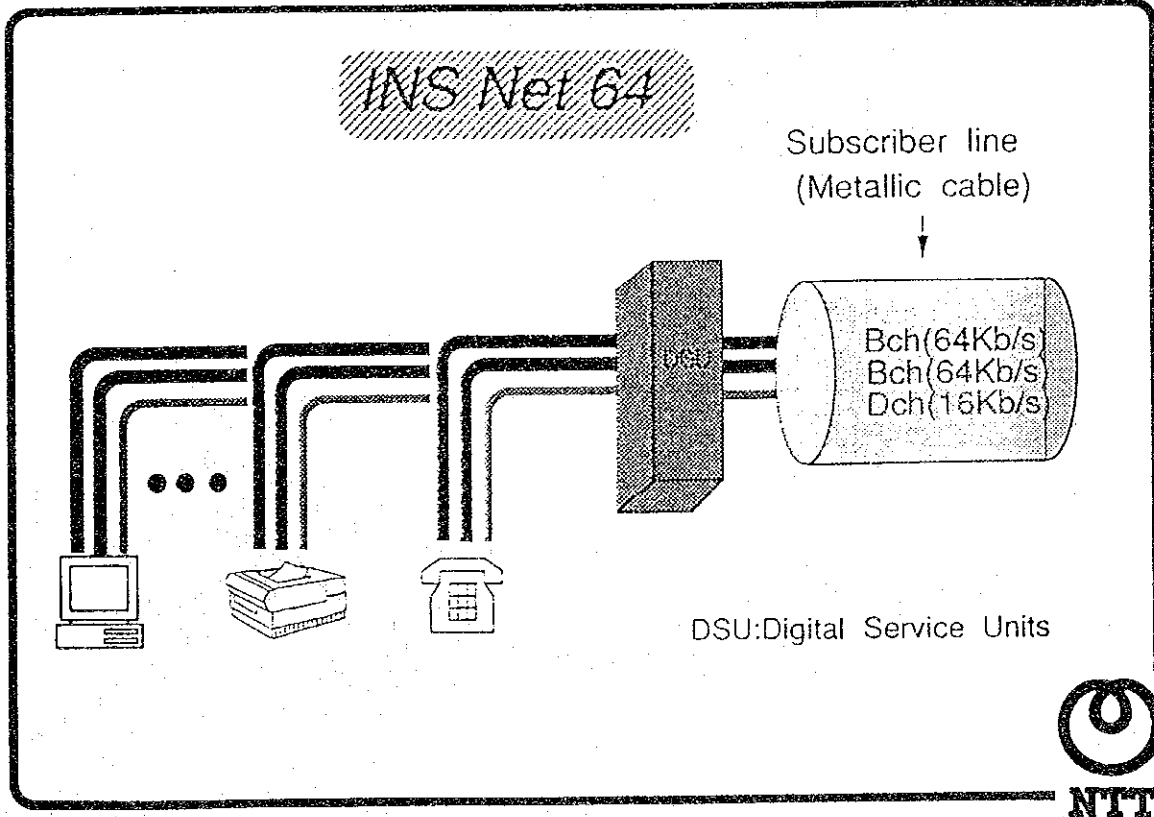
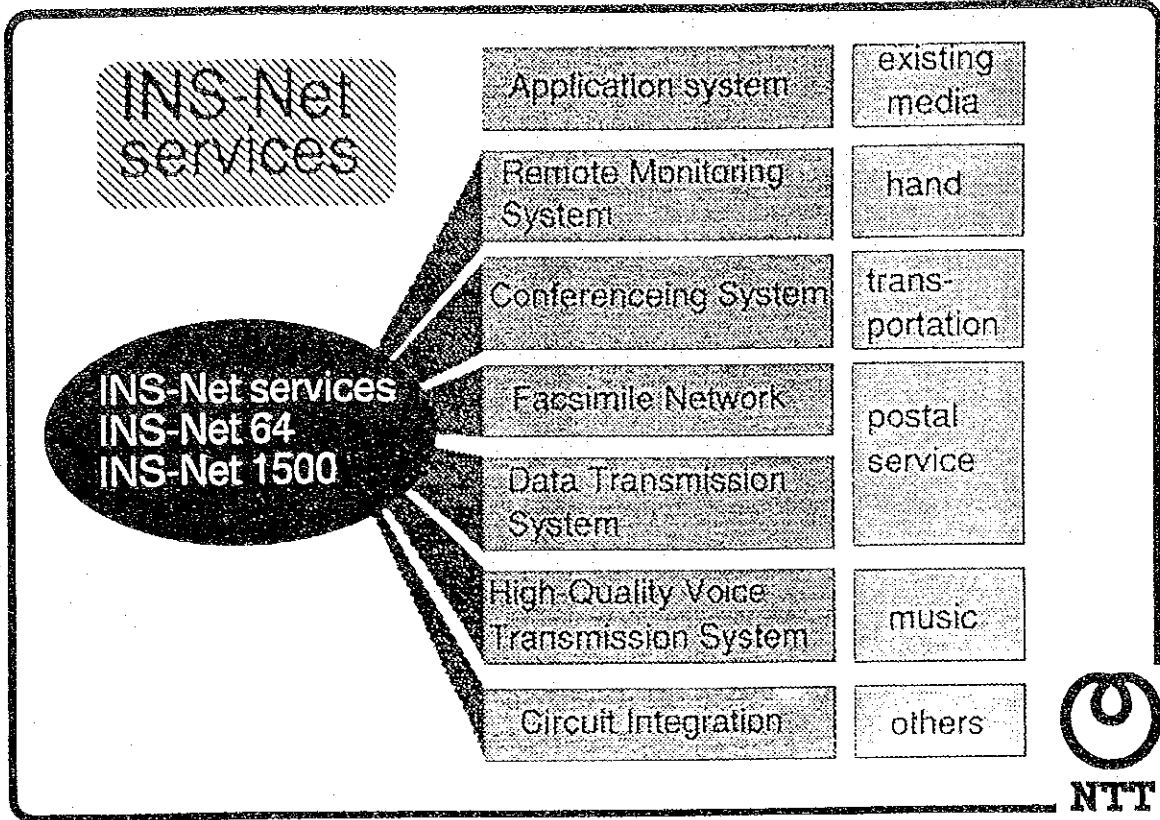
VI&P : Visual, Intelligent and Personal
GW : Gateway

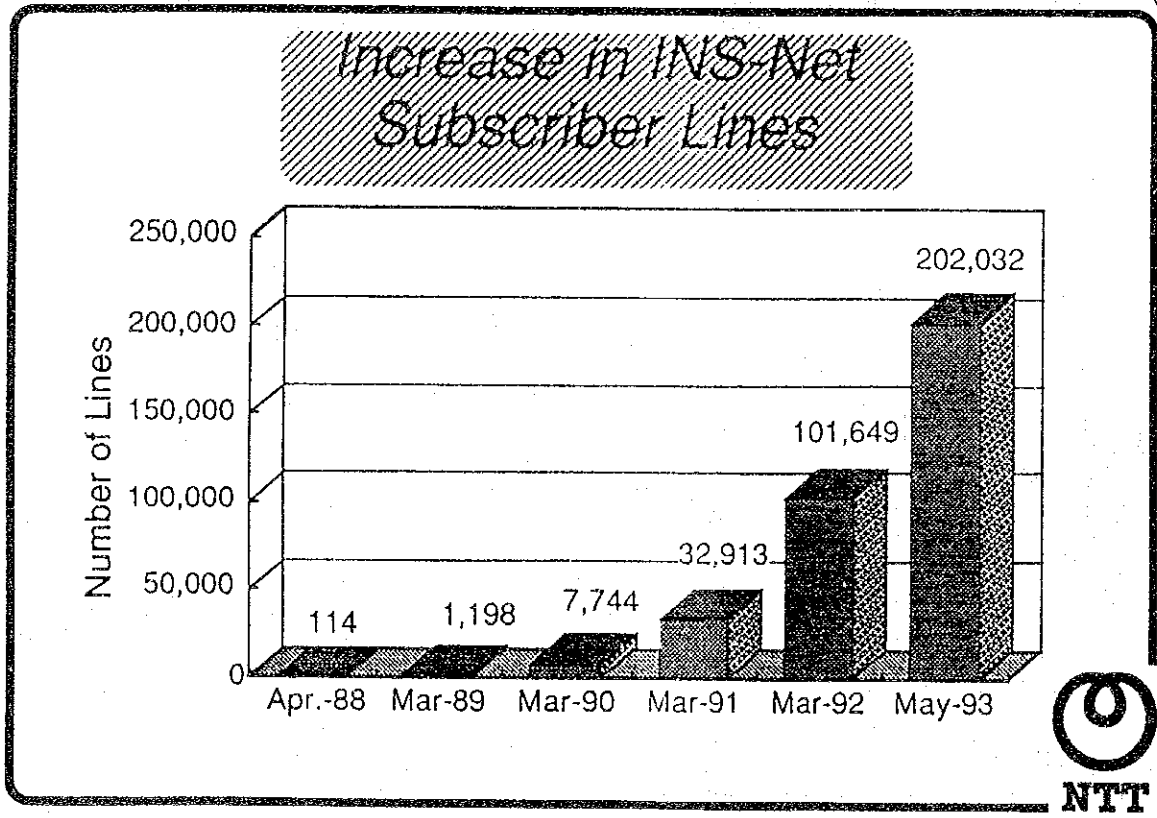
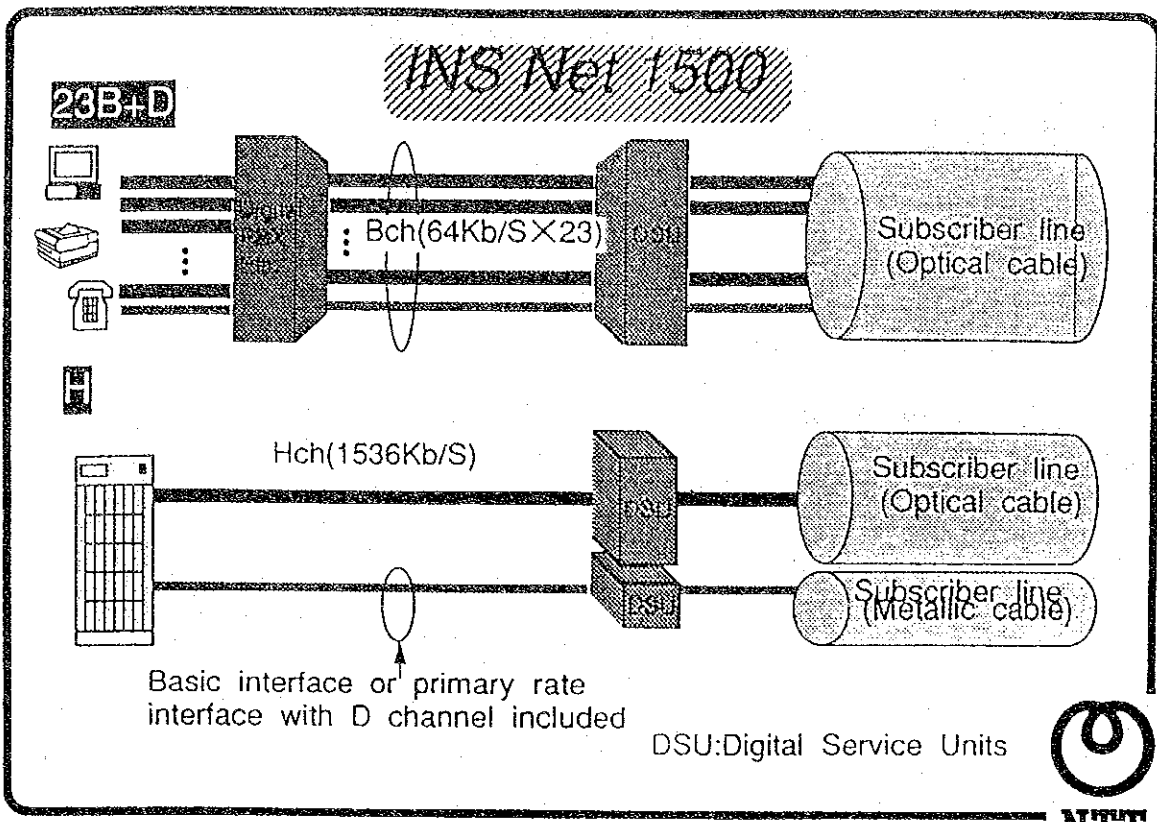


Technology to Support the VI&P Concept

1. ISDN
 - (1) N-ISDN
 - (2) B-ISDN
2. ATM
(Asynchronous Transfer Mode)
3. Frame relay
4. Optical cable distribution system
5. Intelligent network





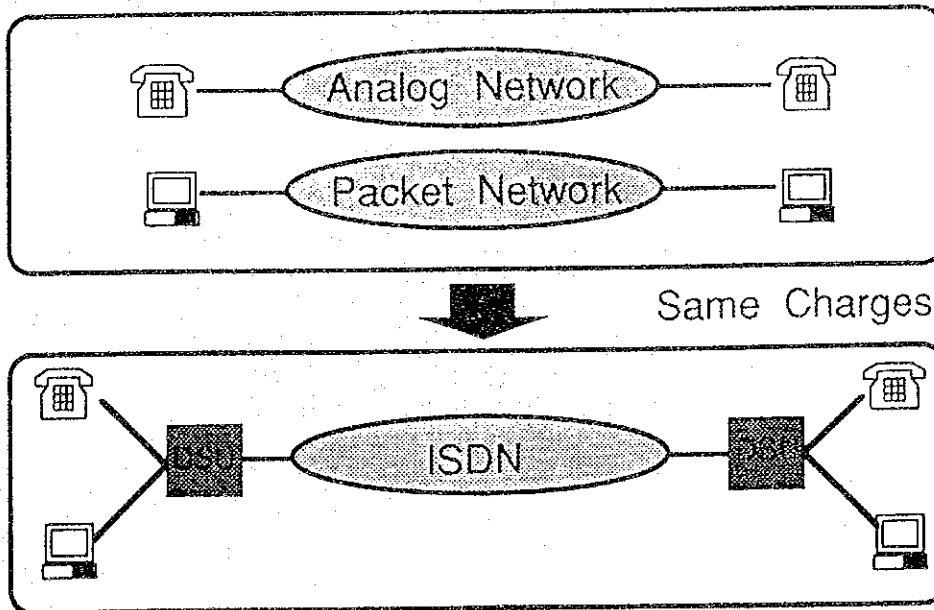


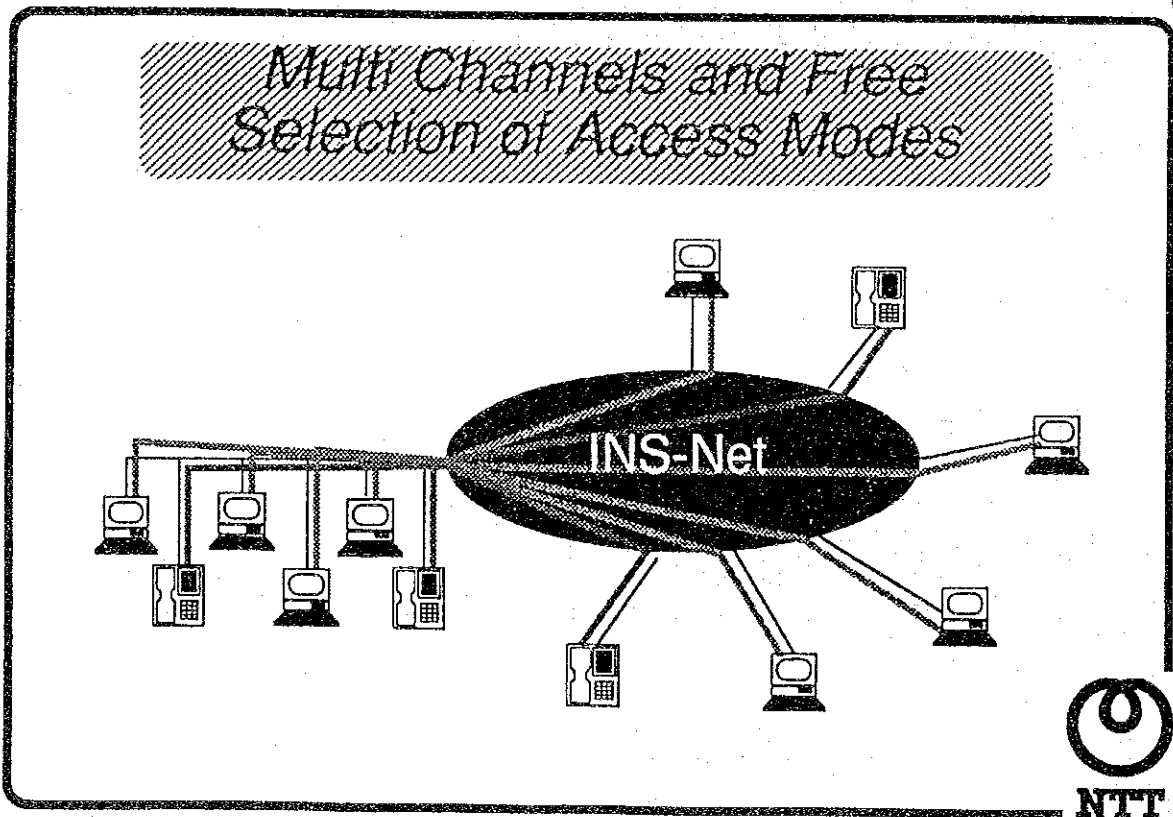
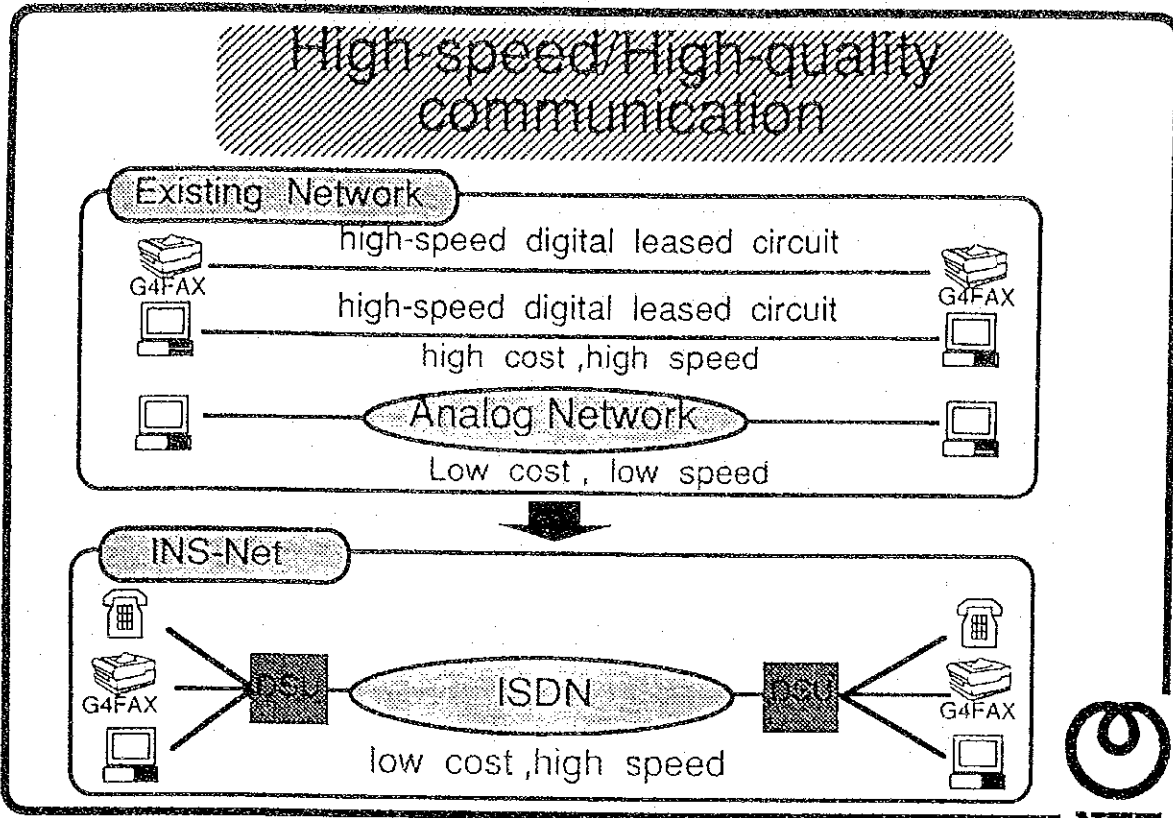
Characteristics of ISDN-Net service

1. Economical digital public network
2. High-speed/high-quality communication
3. Utilization of one interface for multiple channels
4. Integrated service
5. Abundant variety of additional services
6. Communication equipment with international and all-purpose capabilities



Economical Digital Public Network

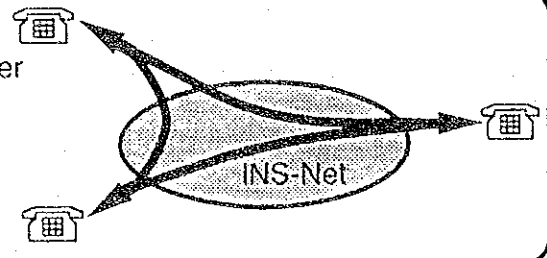




Abundant Variety of Additional Services

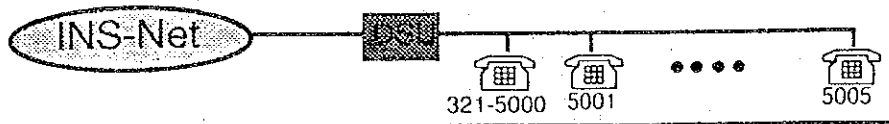
Three Party Service

INS-Net service subscriber can hold the exiting call and add another party onto the same channel.

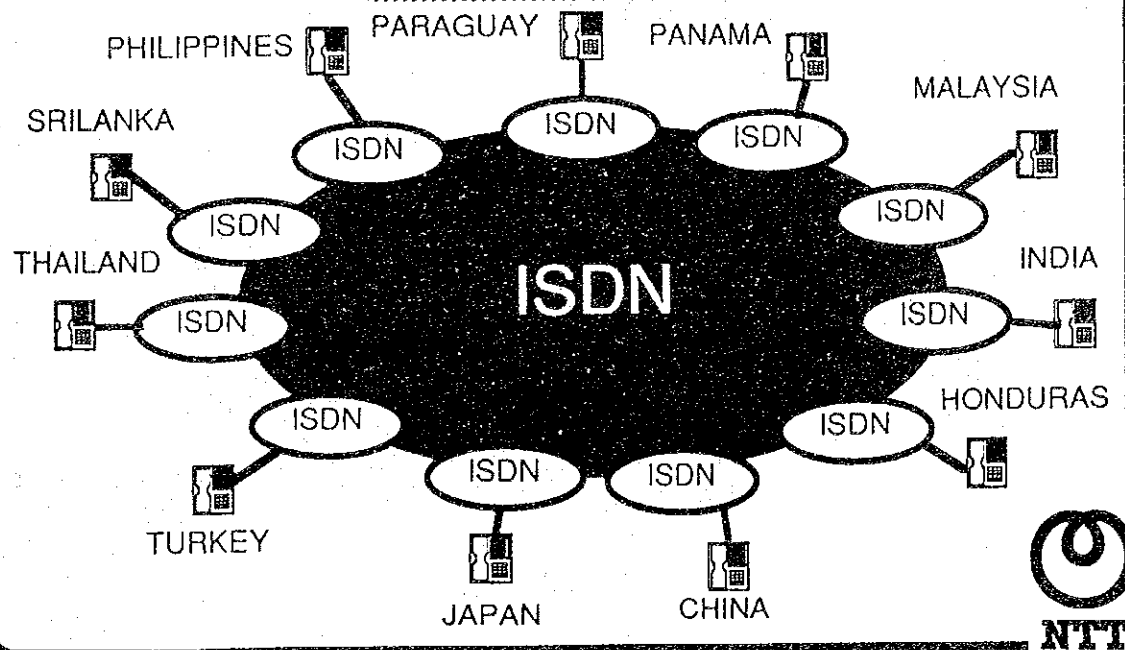


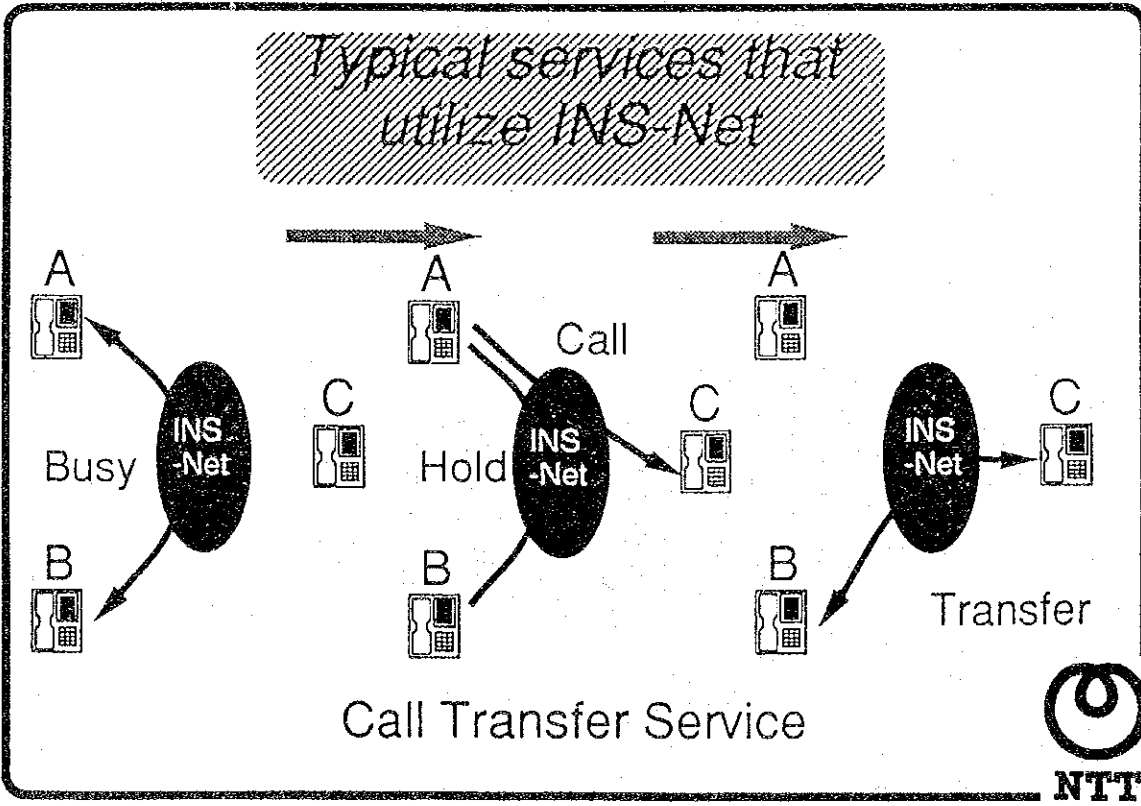
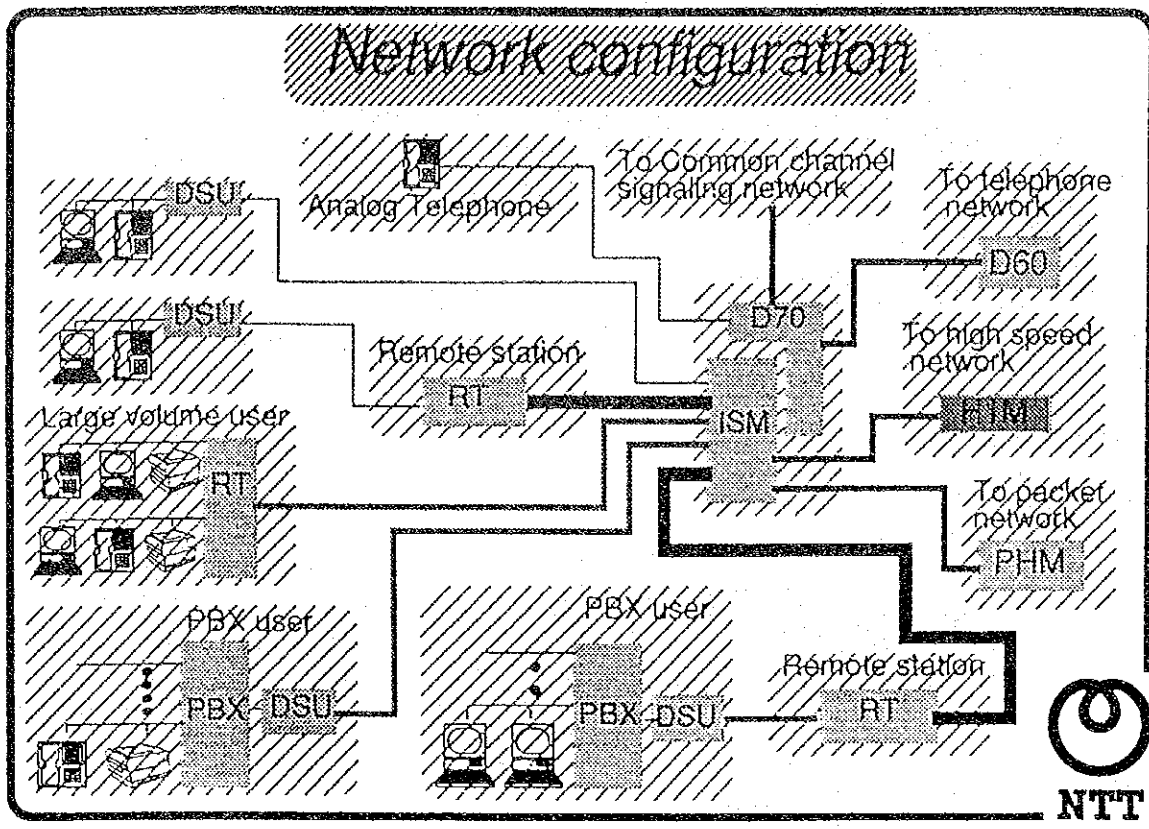
Direct Dialing In

By defining a direct dialing in number for each terminal, a specific terminal can be specified, even from the public switched telephone network.



Globalization





Expected B-ISDN Services

Interactive services

- | | |
|--------------------------------|-----------------|
| Broadband TV telephone | Animation/voice |
| Multiple audio program signals | Audio |
| High-speed telemetry | Data |
| High-speed telefax | Document |
| Video mail service | Animation/voice |
| Document mail service | Document |
| Broadband videotex | Multi type |

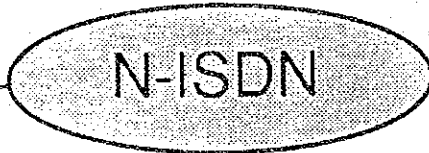
Distribution services

- | | |
|--|---------------------|
| Pay TV | Video |
| Document distribution | Text, Etc. |
| High-speed unrestricted digital information Distribution service | Data |
| Video information distribution service | Animated picture |
| Videography | Still picture, Etc. |



B-ISDN

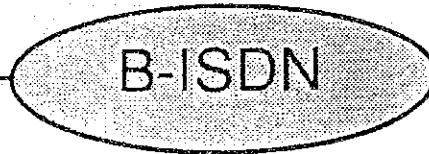
Audio
Packet
Still-picture
Simple
animation



64~
1536kbit/s

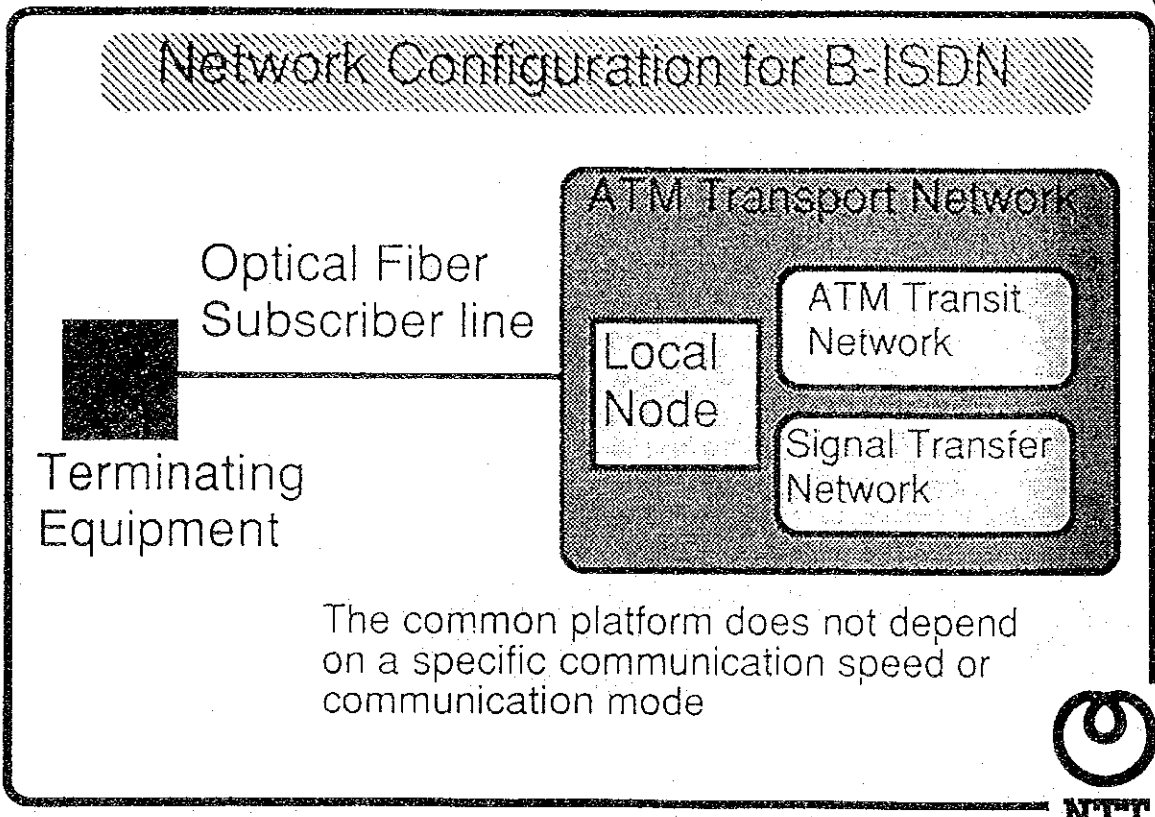
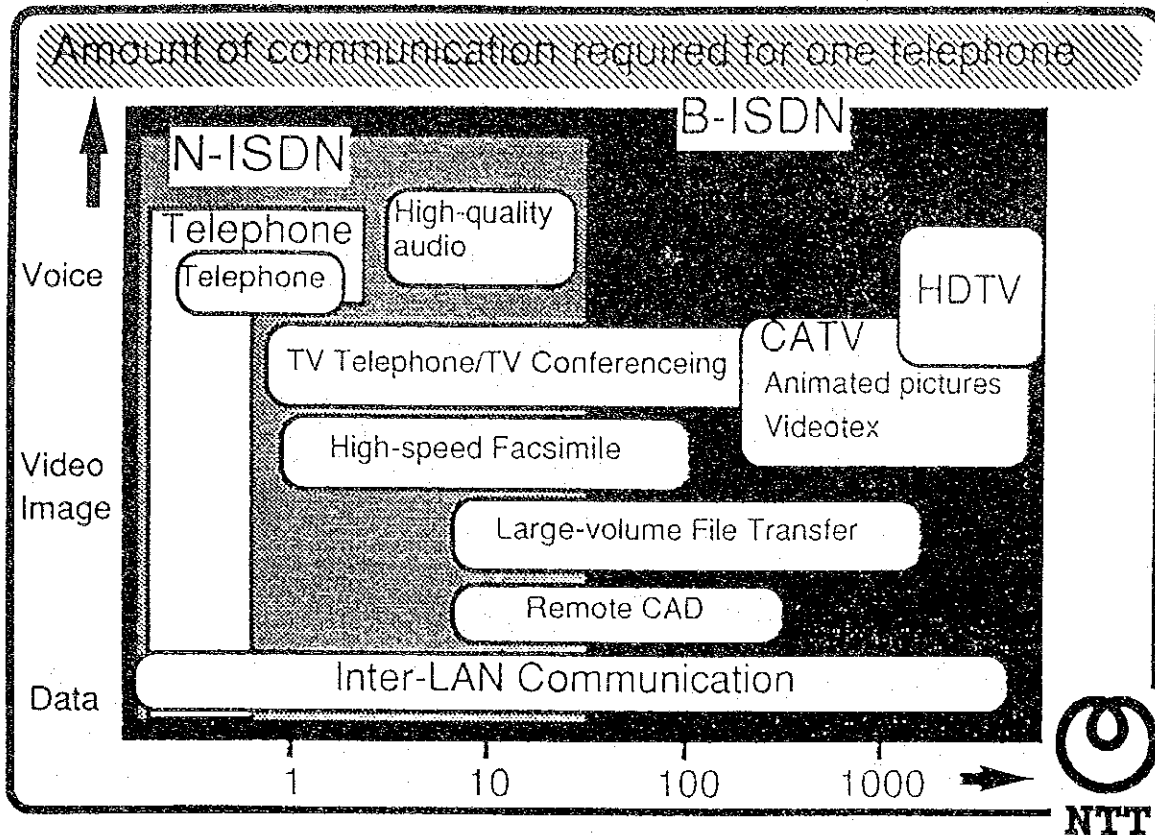


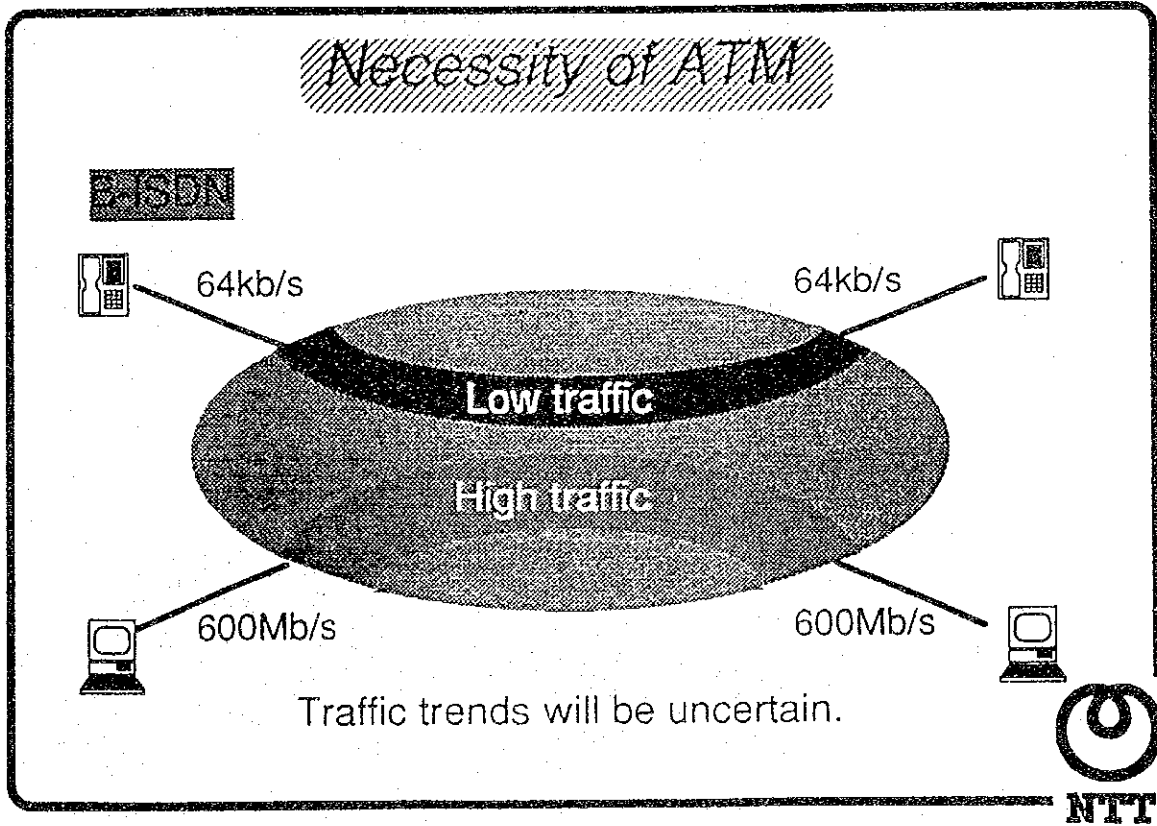
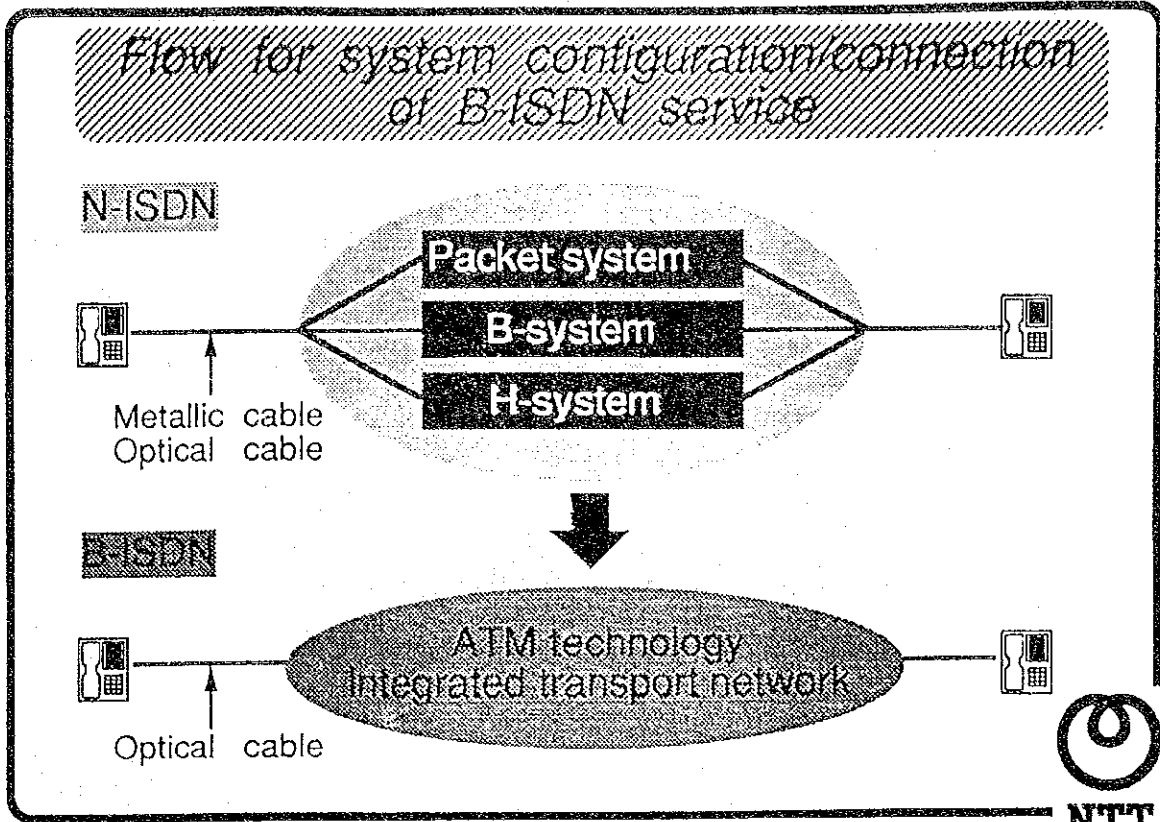
Animation
Large-volume file

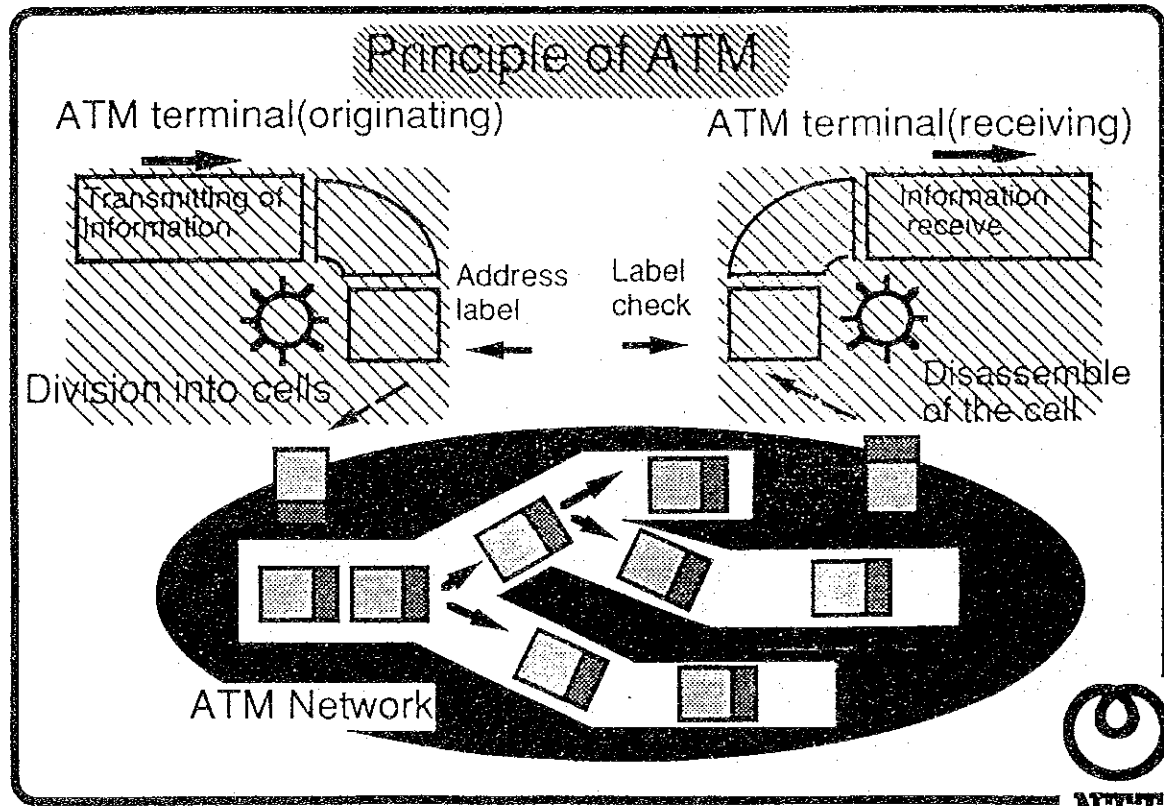
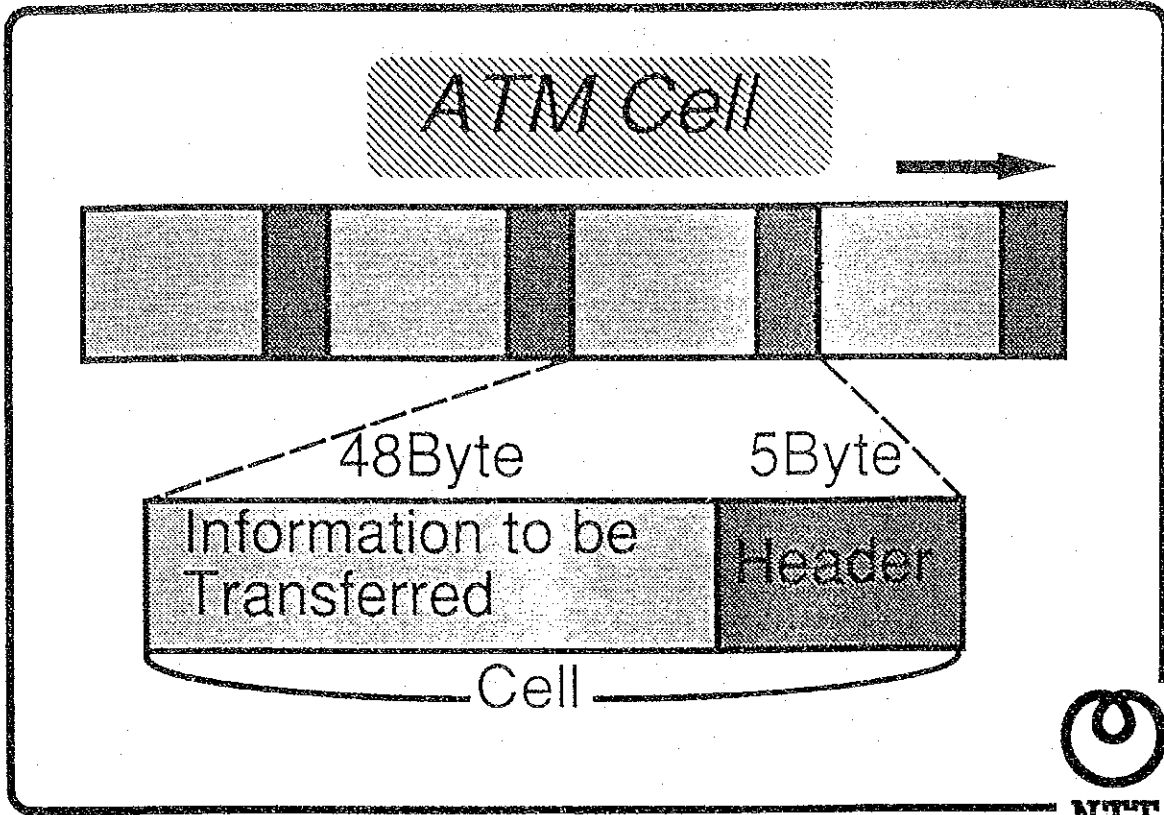


64kbit/s~
600Mbit/s









Characteristics of ATM

1. Cells are output according to the information generated
2. Cell length is fixed
3. ATM dose not require error checking/resending control



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Basic Technologies for realization of ATM

1. Divide/regenerate information into/from units
2. LSI technology
3. Mounting technology to dissipate heat in ATM switching system



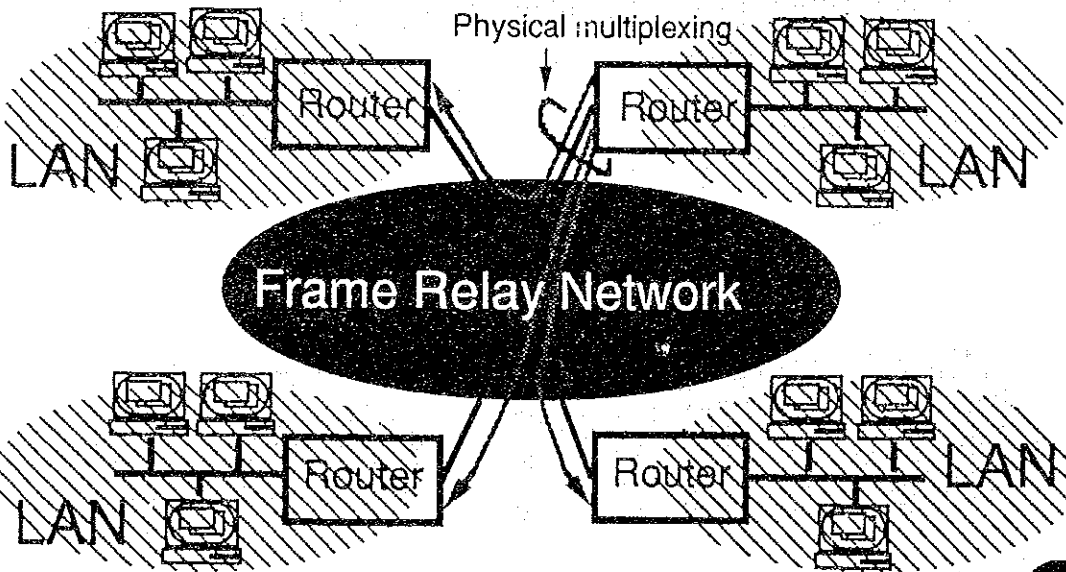
NTT

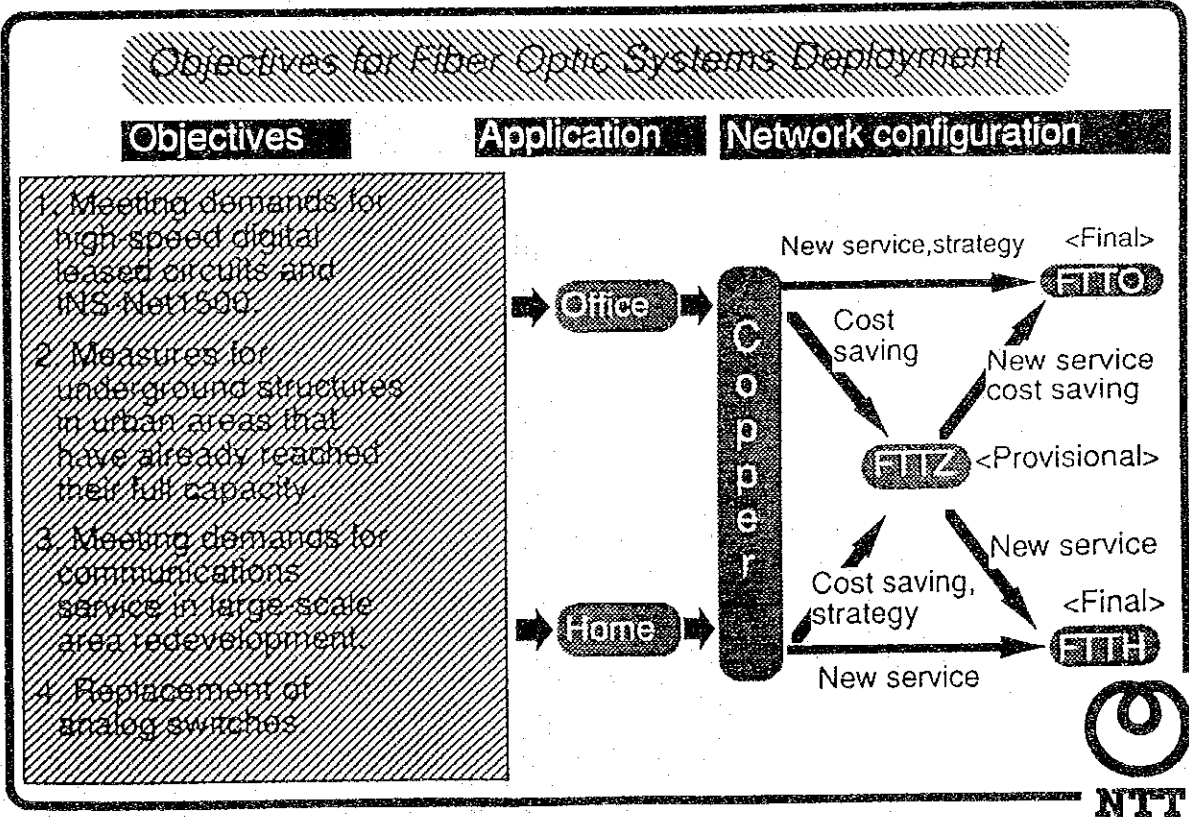
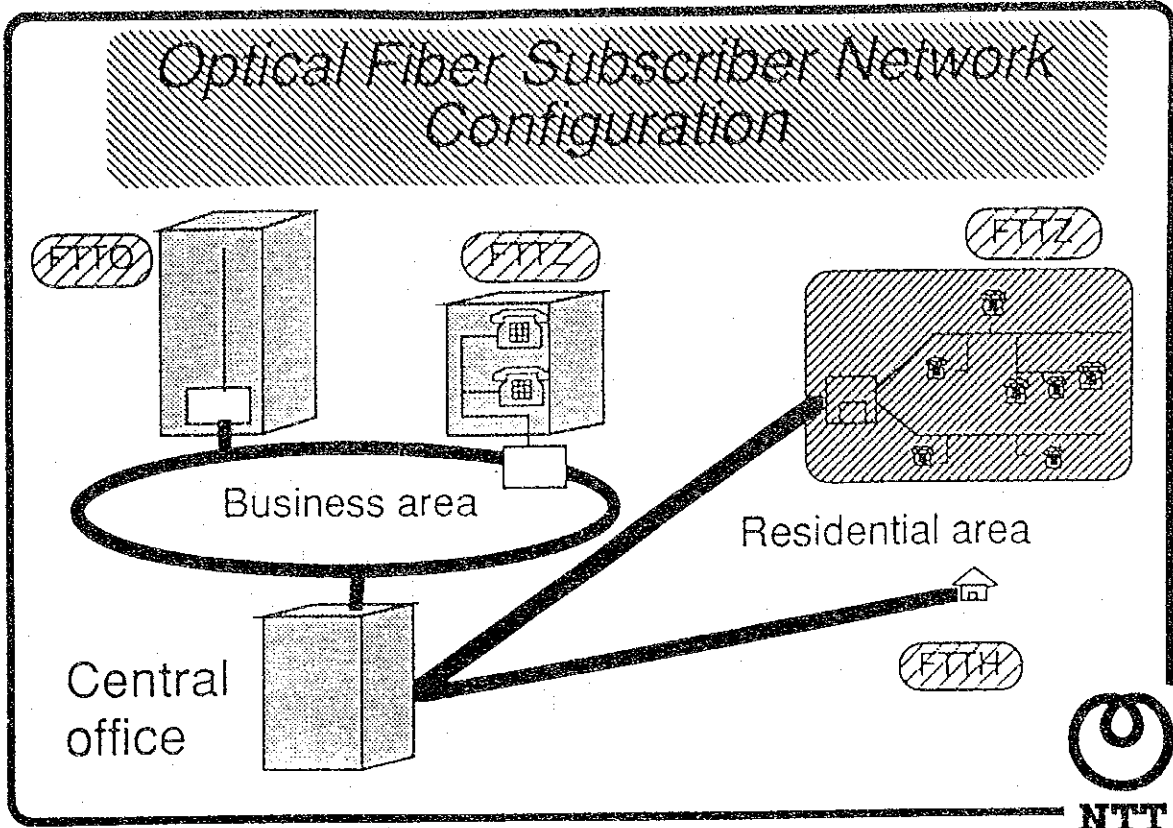
Frame relay characteristics

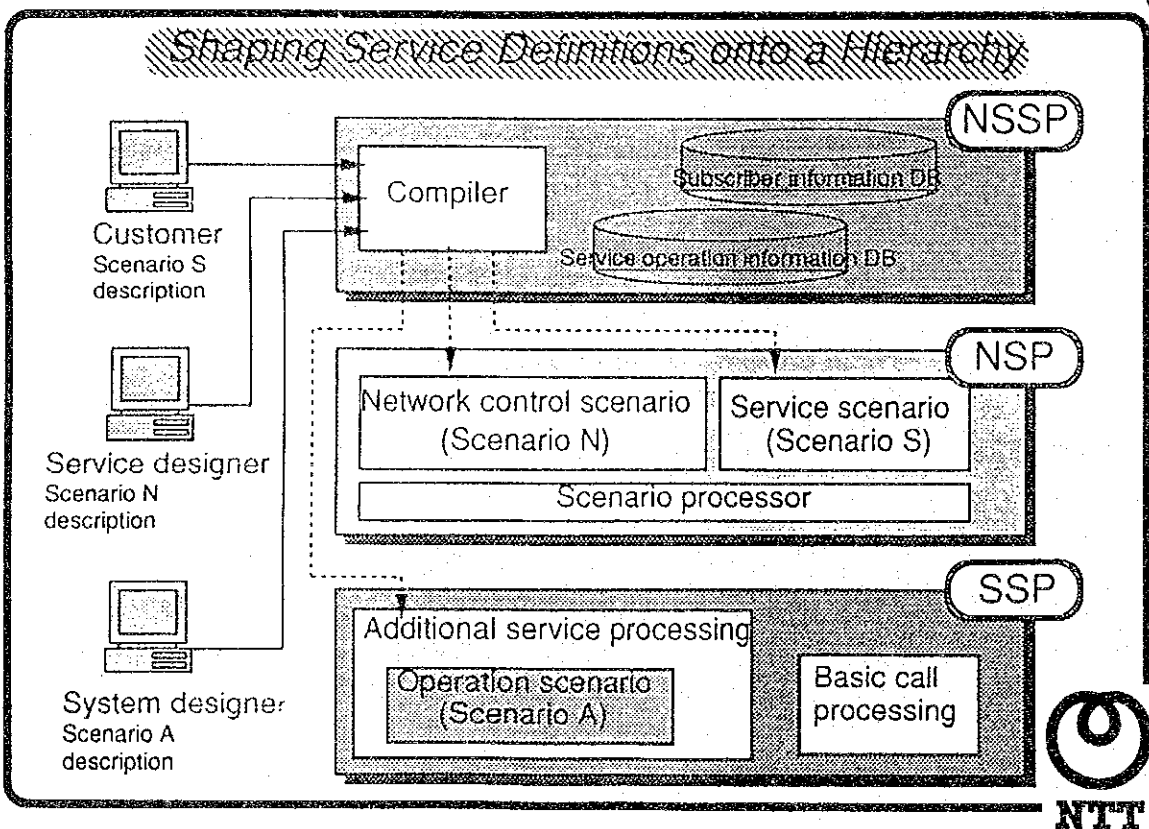
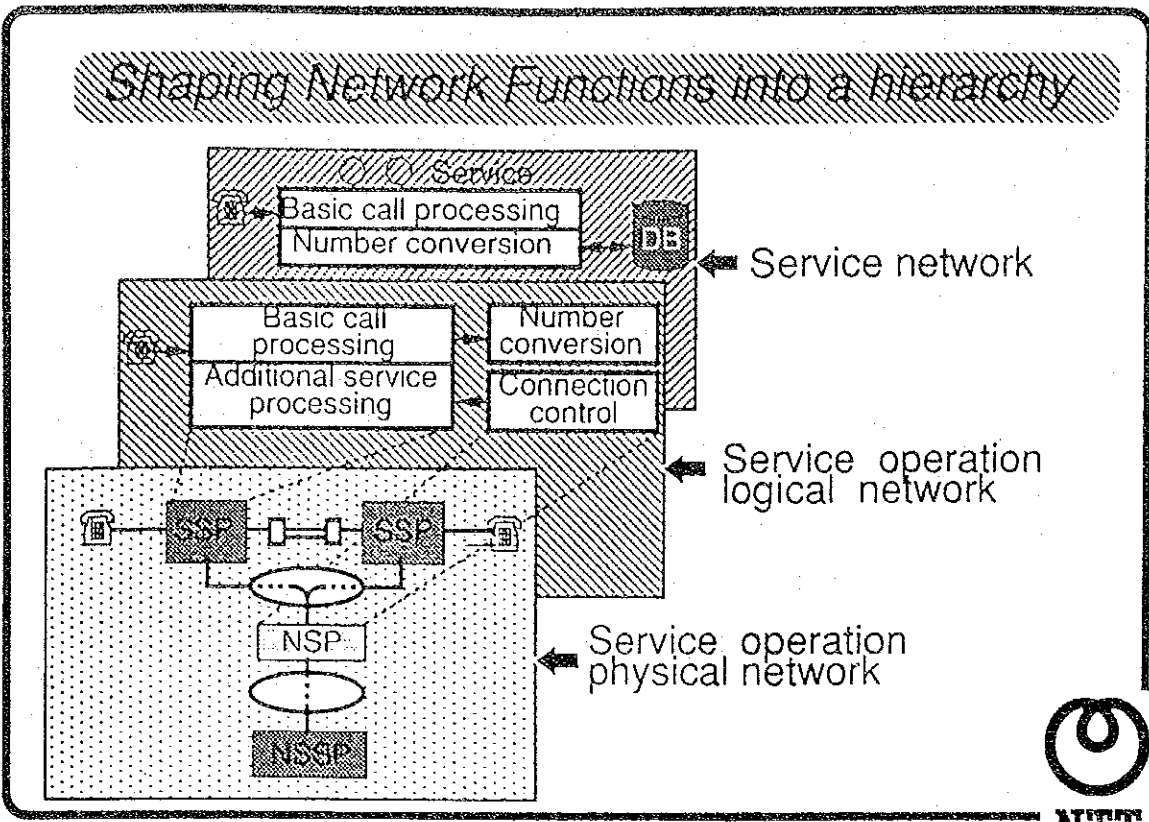
- 1. High-speed communication using a simple protocol
- 2. Practical use of typical user protocol
- 3. Congestion control
- 4. Frame multiplexing functions

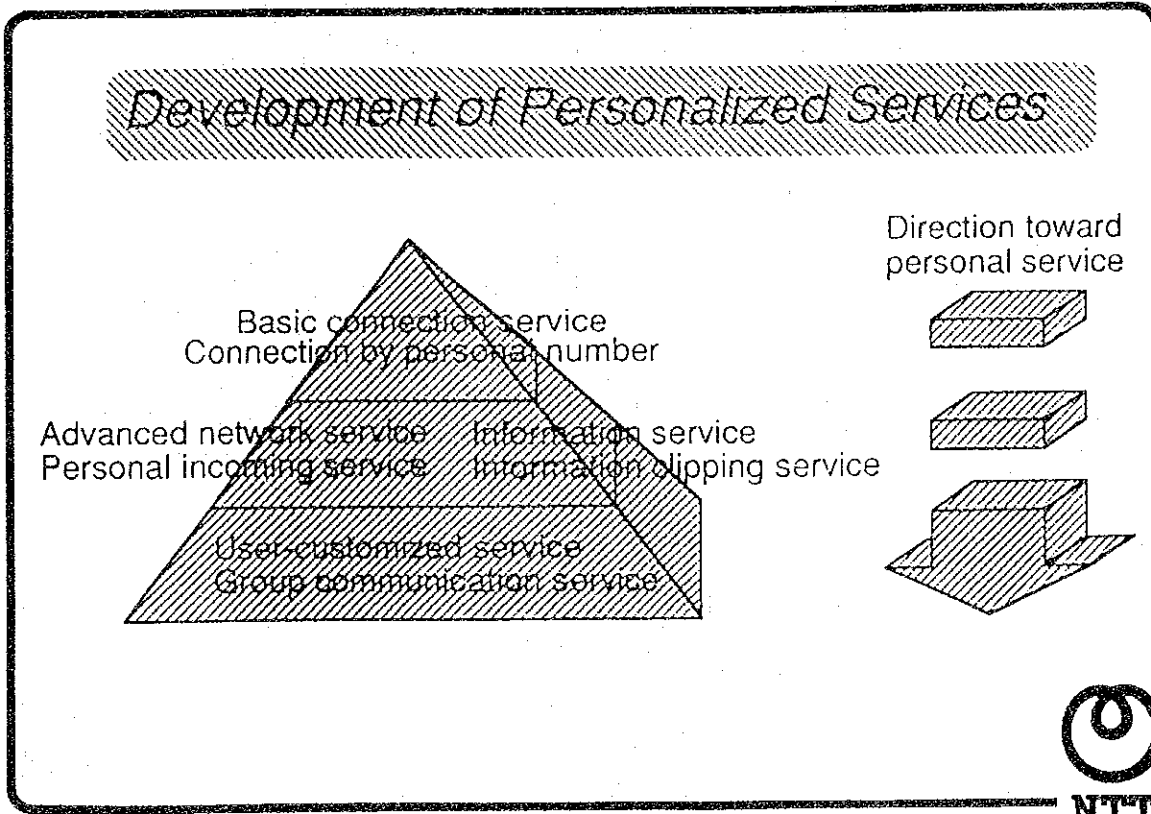
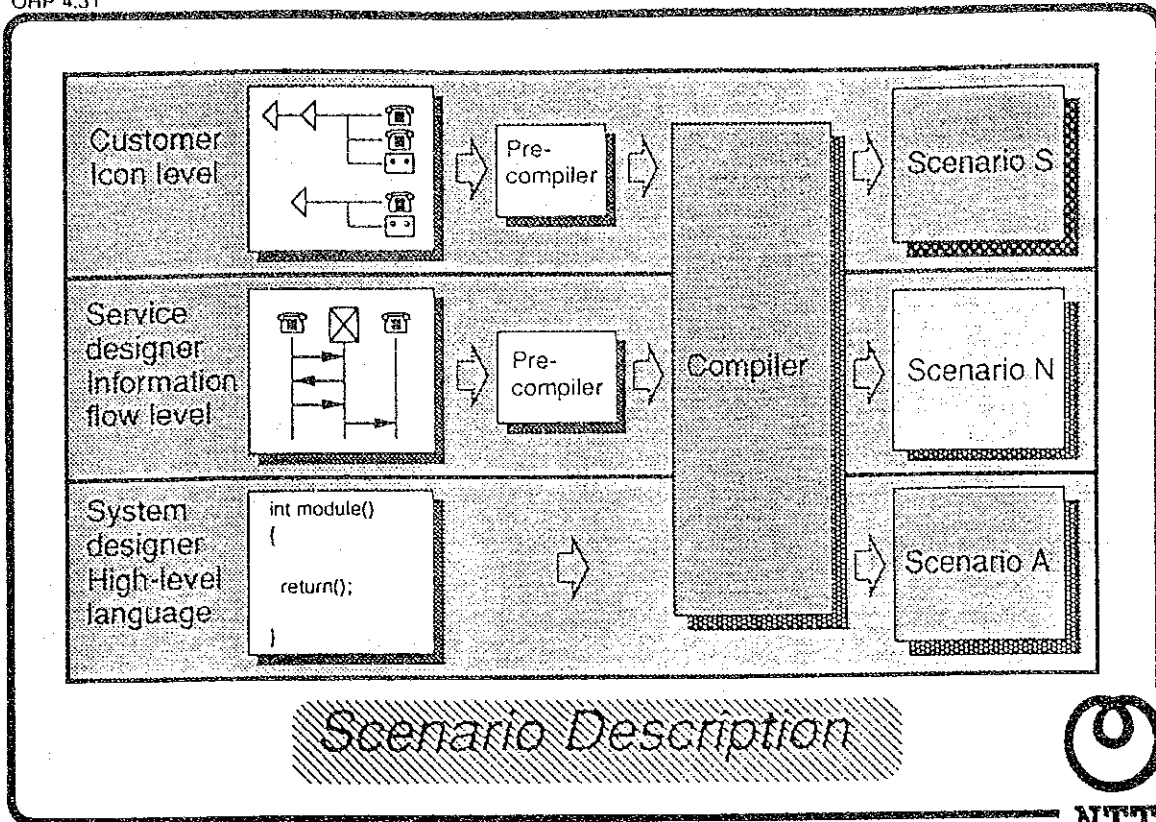


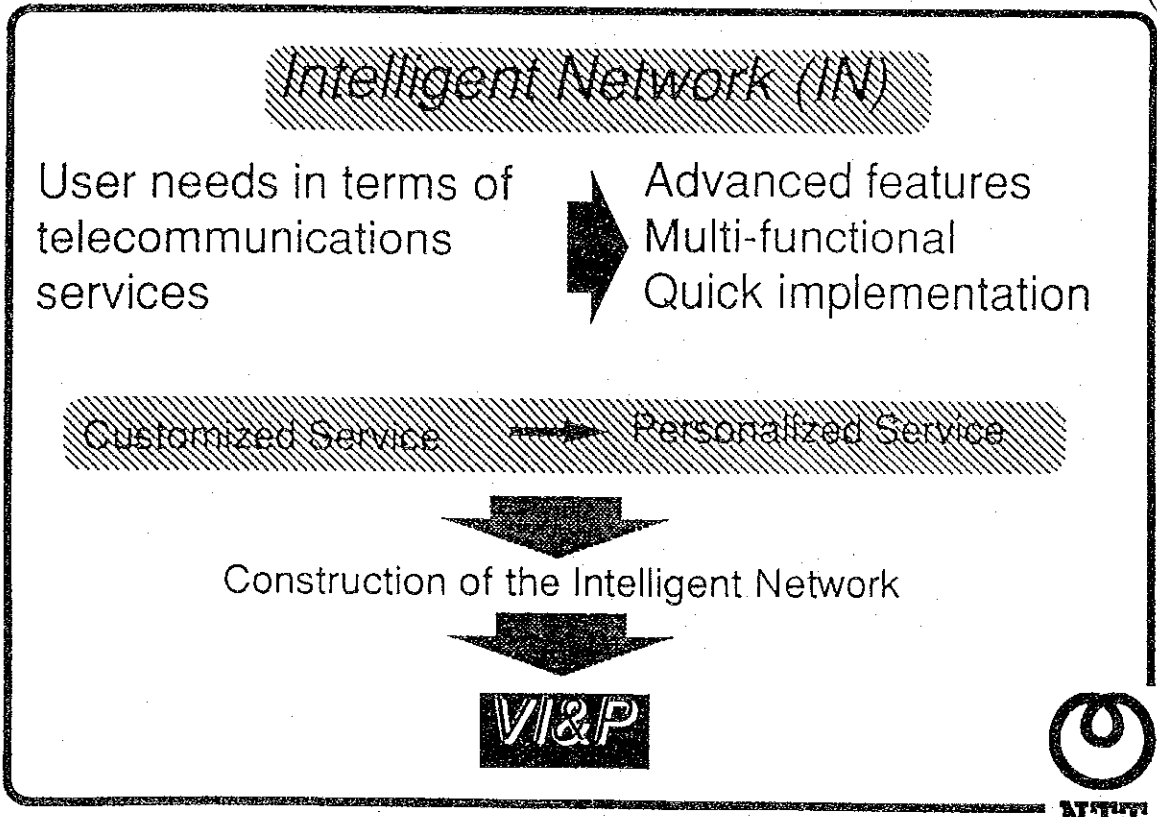
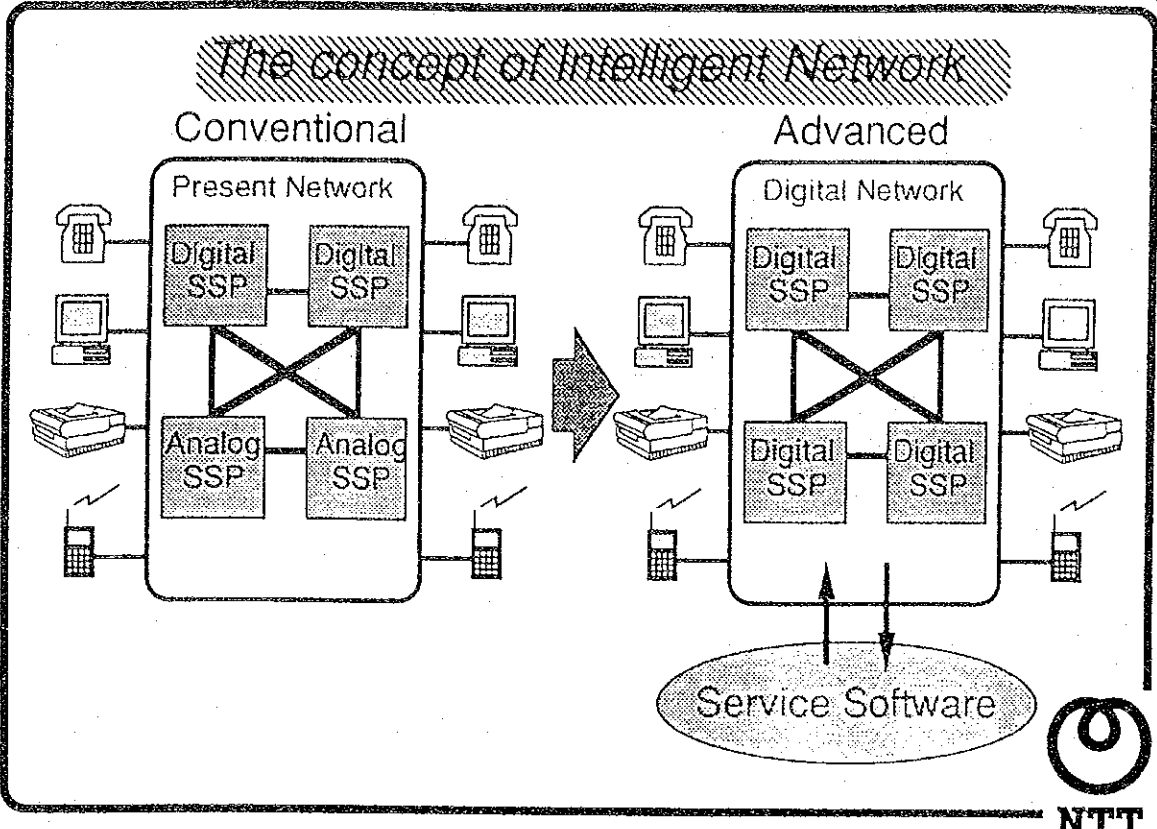
Frame Relay Connection

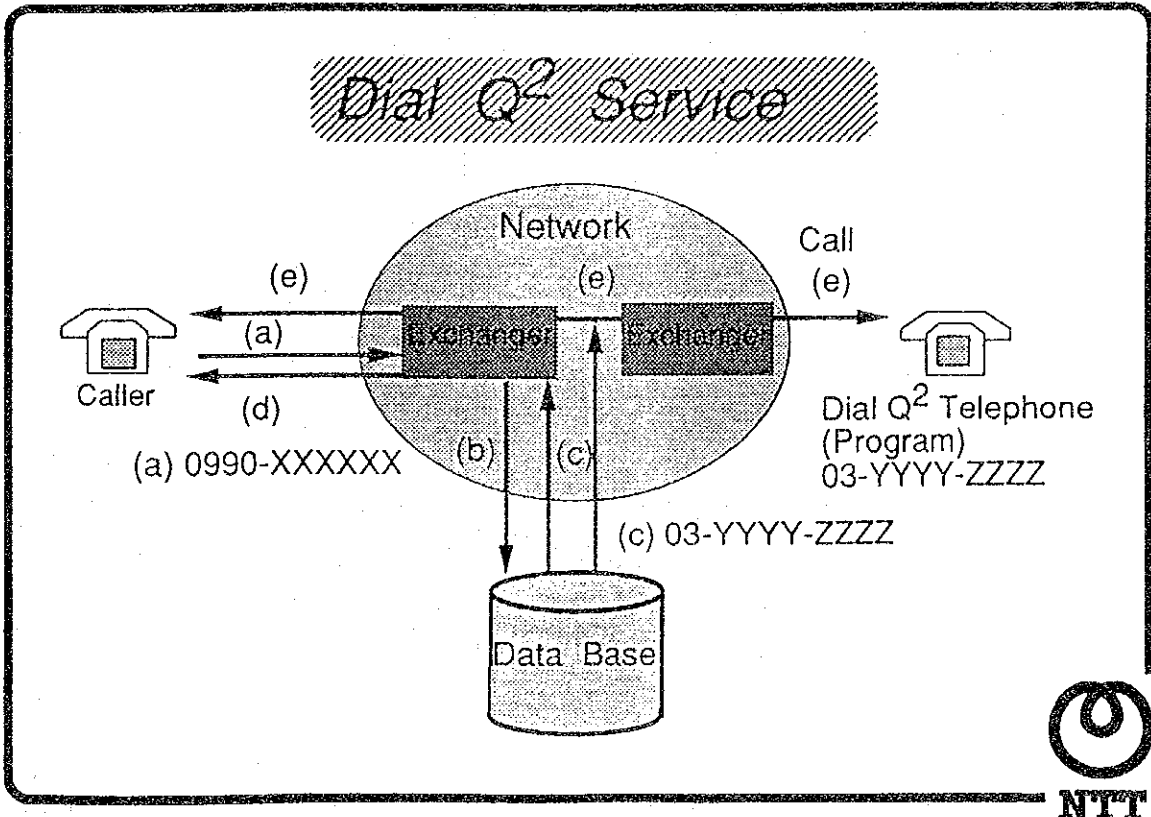
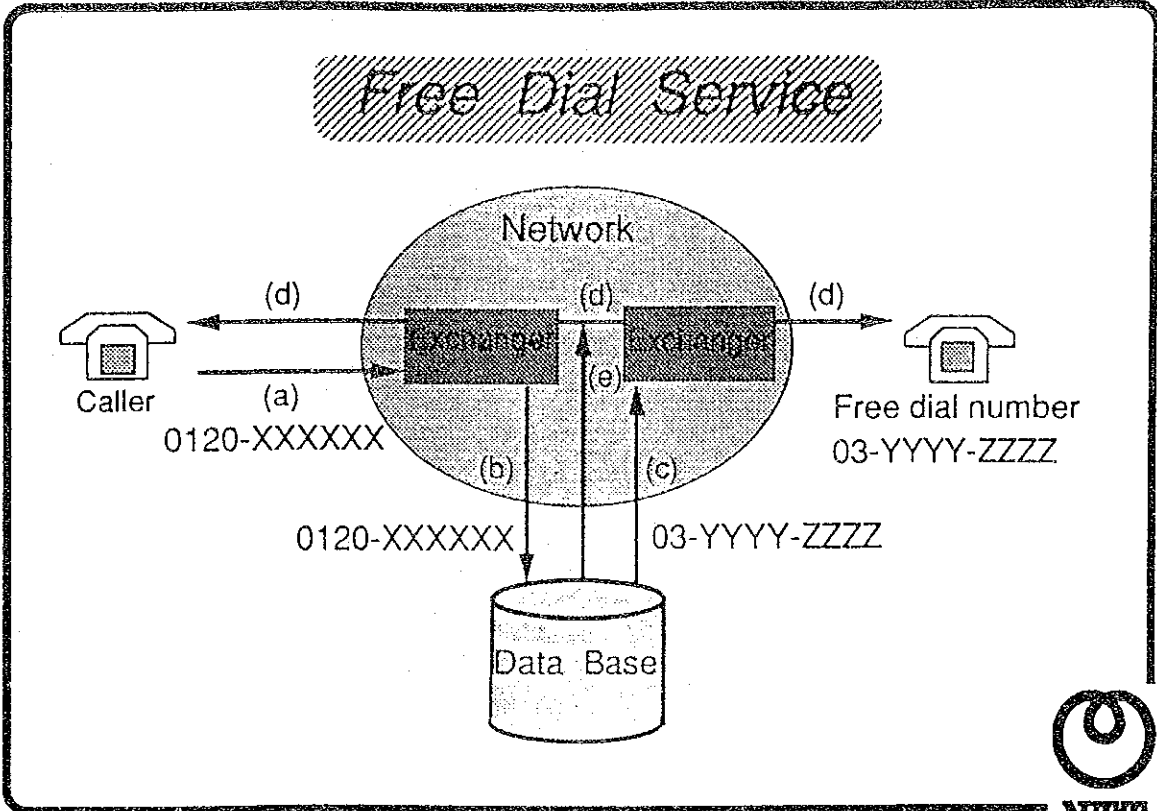


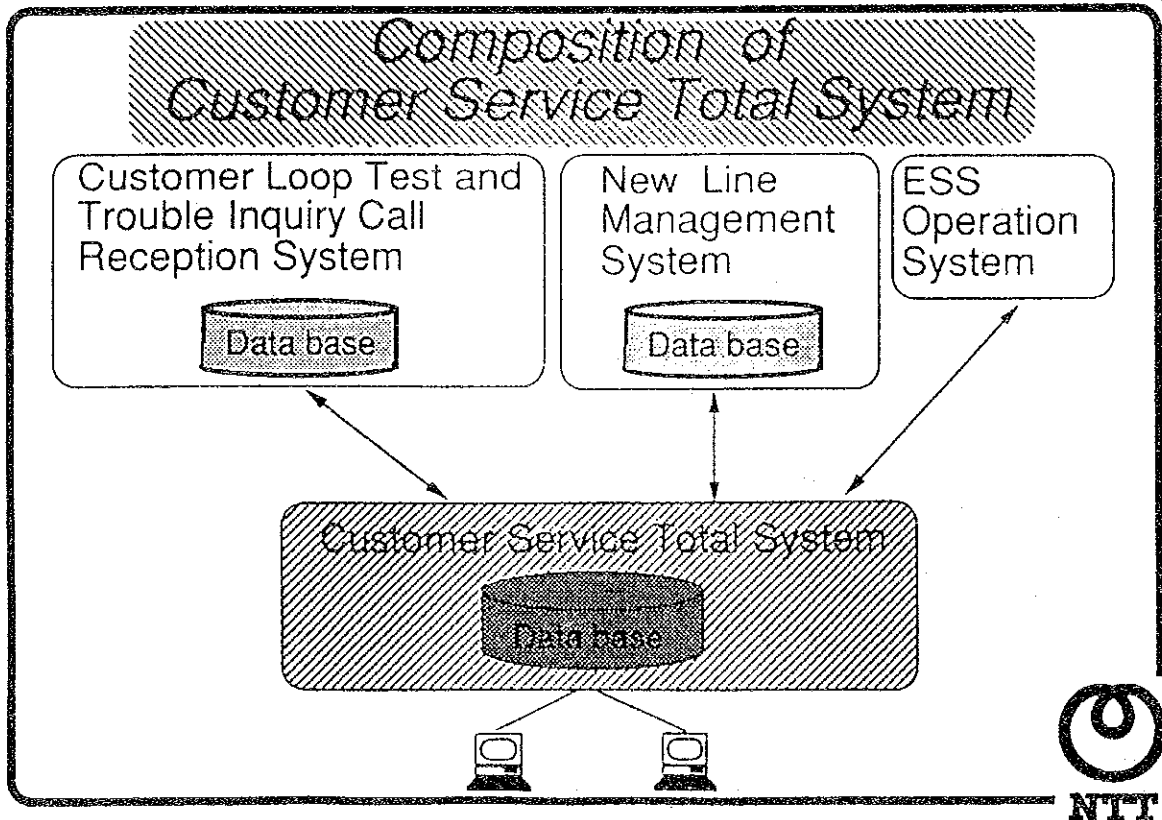
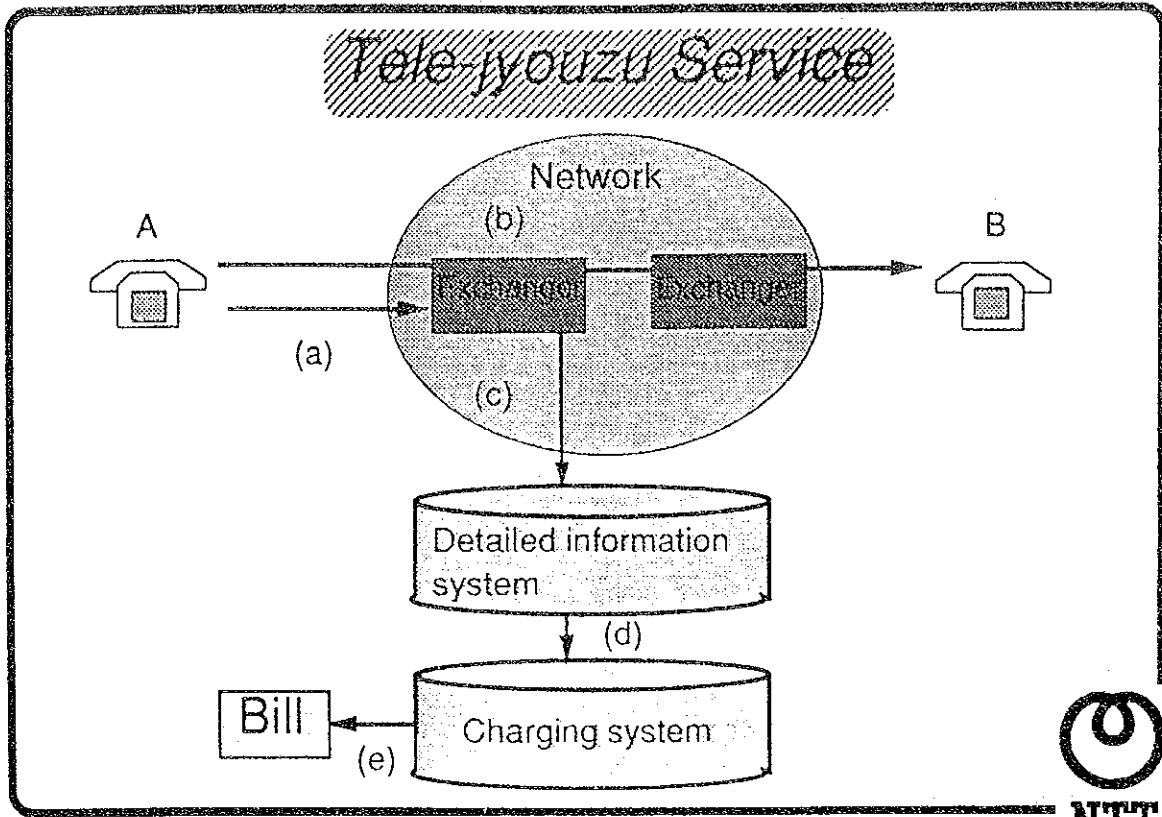


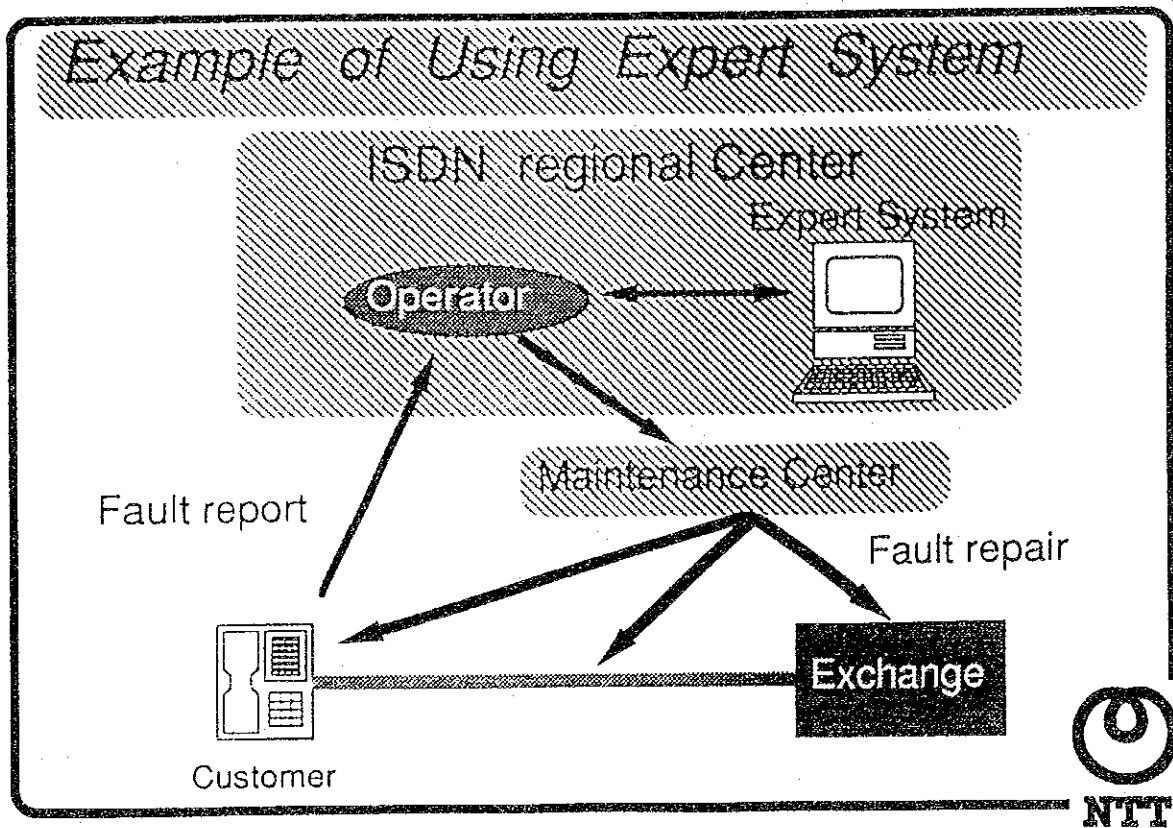
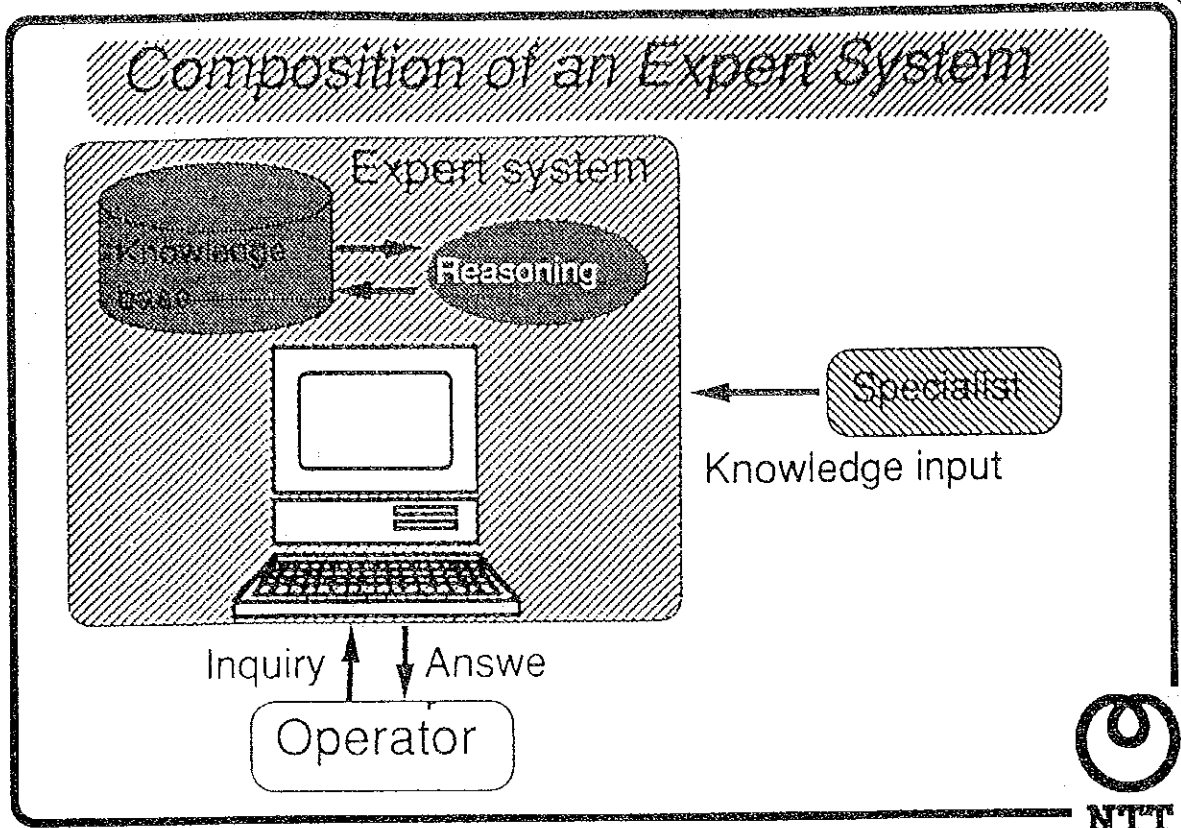












The Concept of Operation Systems

1. Operations aimed at improving the nature of service for user.
2. Operations designed to improve overall operational efficiency.
3. The effective operations of network elements to maximize their efficiency.



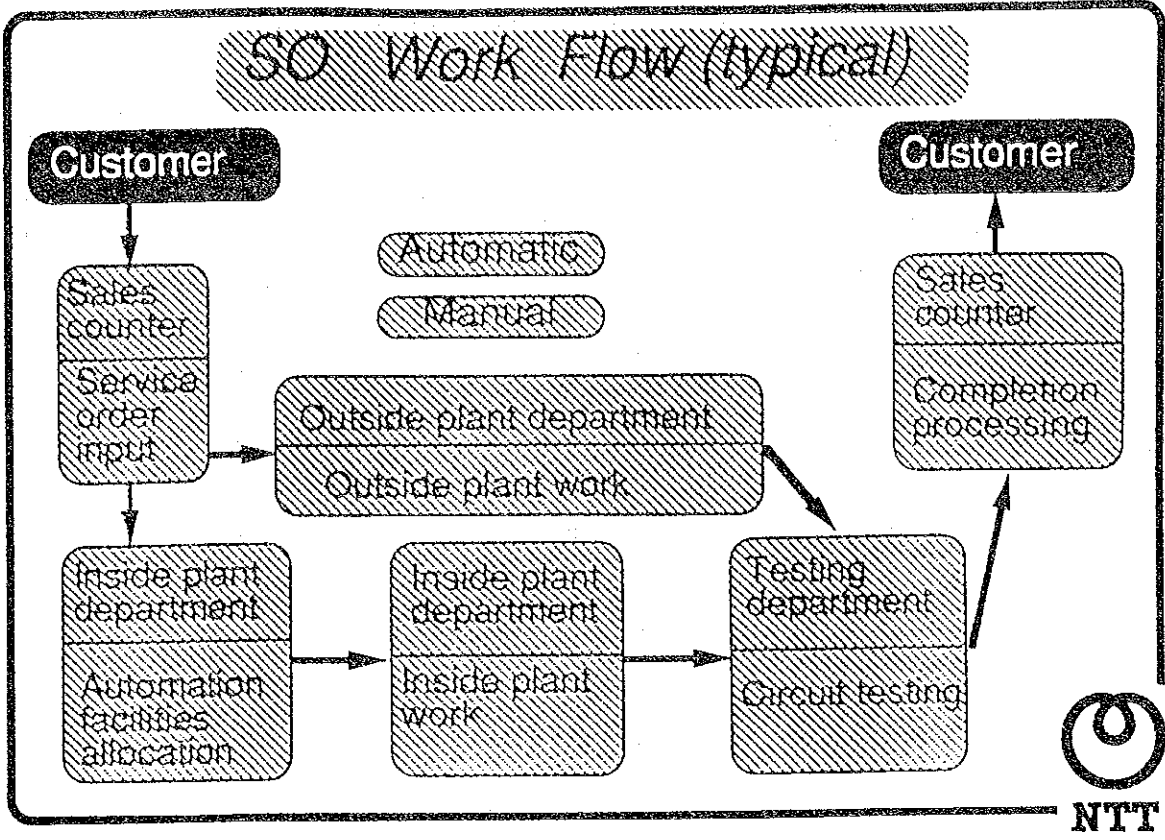
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Basic Policies of Operation System Development

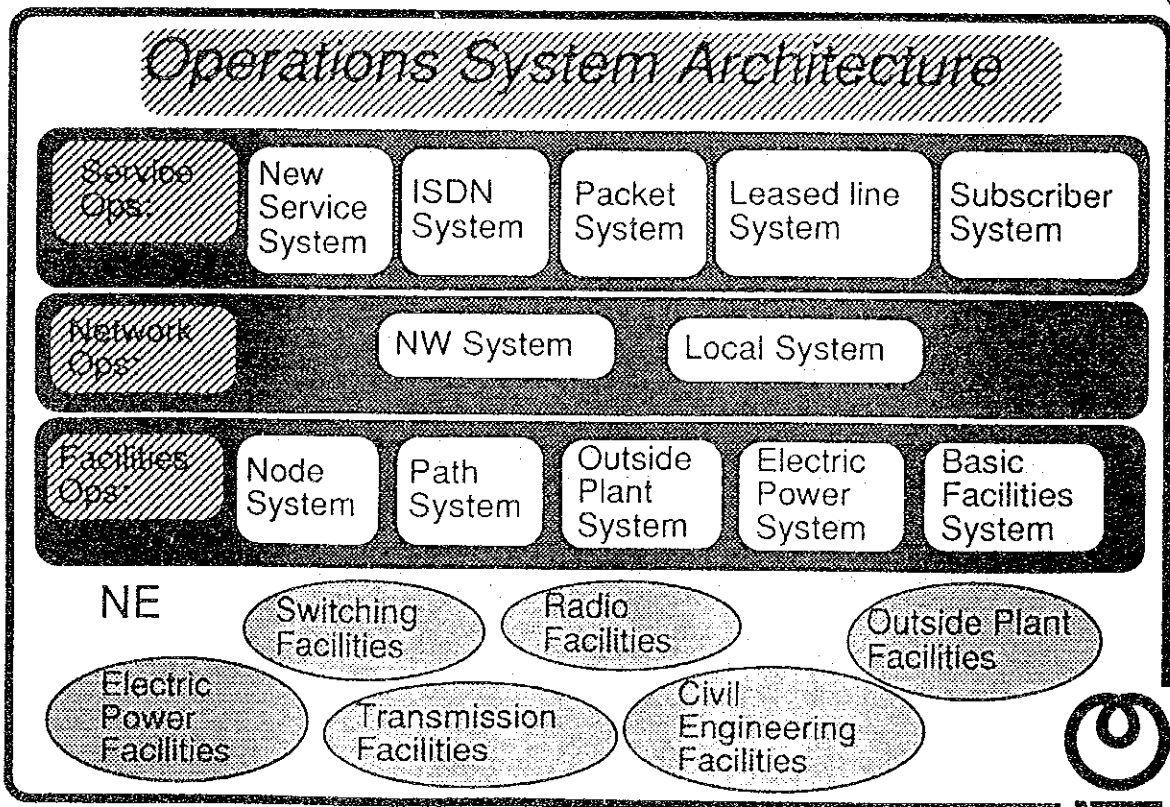
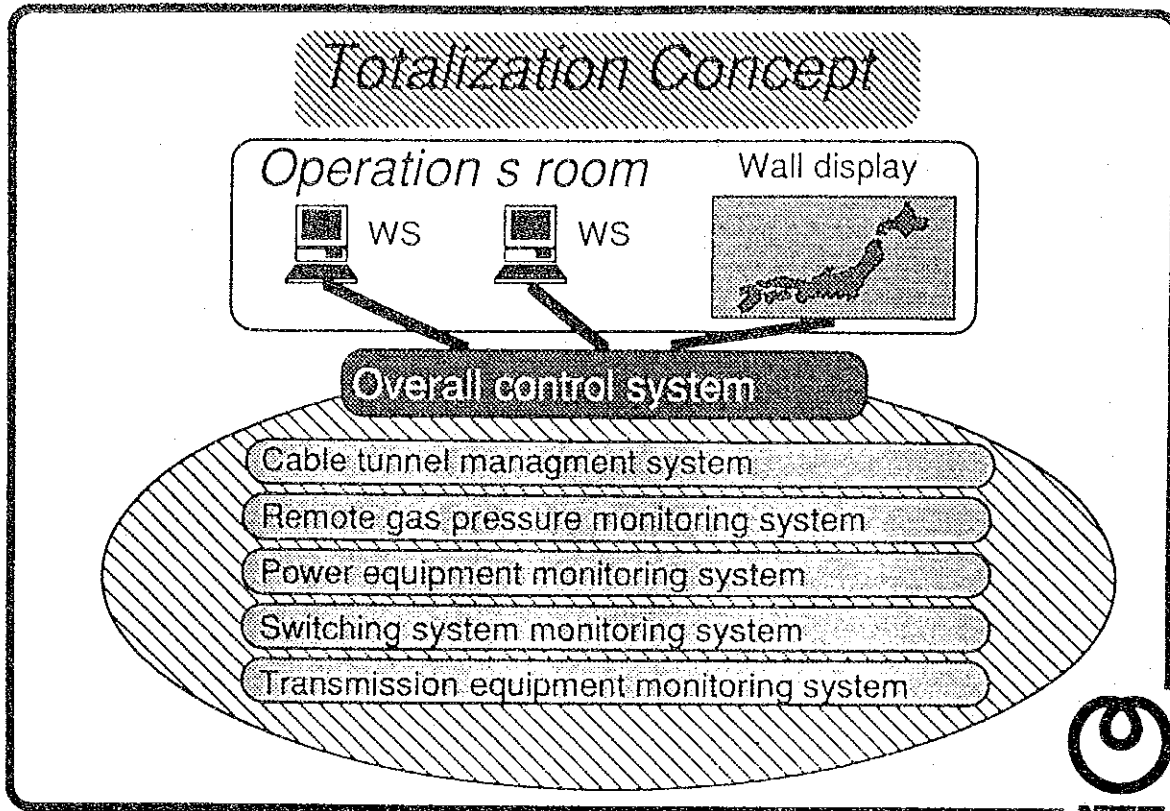
1. Flow-through orientation
2. Area-free orientation
3. Standardization of man-machine Interface



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- ### Future trend in operations system development
1. Further improvement of user services
 2. Realization of intensive, broad-area maintenance
 3. Promotion of totalization
 4. Standardization of operations system platforms
- 
NTT



公開セミナー出席者リスト

1. ケニア

| No. | [氏名] | [所属機関] | [現職] |
|-----|--------------------------|--------|--------------------------------------|
| 1. | Alfred M. Ambani | KP&TC | Executive Engineer |
| 2. | A.A. Andanje | " | Assistant Manager |
| 3. | Vincent Ayallo | KCCT | Principal Lecturer |
| 4. | Blaga | KP&TC | Senior Assistant Manager |
| 5. | James Gwayi Chore | " | Manager, Power & AC Planning & Engg. |
| 6. | Tom Enoch Diero | " | Senior Assistant Manager |
| 7. | D.M. Gacoka | " | Senior Assistant Manager |
| 8. | C.N. Gathungu | KCCT | Principal Lecturer |
| 9. | Davis P.Ngugi Gikaru | " | Lecturer |
| 10. | M.M. Githiri | KP&TC | |
| 11. | Lucas Odera Hajula | " | Senior Assistant Manager |
| 12. | Mercy Wambui Kamau | " | Assistant Manager |
| 13. | John Kariuki Kanyi | " | Assistant Manager |
| 14. | John Ngethe Kariuki | " | Chief Research Officer |
| 15. | Henriques Albert Katema | " | Area Manager, Nairobi Central |
| 16. | D.M. Kimani | " | Manager, Construction |
| 17. | Helen Kinoti | " | Senior Assistant Manager |
| 18. | P.M. Kirinya | " | |
| 19. | J.M. Lugalia | " | Assistant Manager |
| 20. | John Magenya | KCCT | Lecturer |
| 21. | Alexander Jotham Maina | KP&TC | Senior Assistant Manager |
| 22. | Frederick Masinde | " | Senior Research Officer |
| 23. | Joseph Gisoni Mbera | " | Area Manager, Nairobi South |
| 24. | H.N. Mbogoh | " | SAM/BC&MU/GM/TS Office |
| 25. | Elizabeth L. Migwalla | " | Manager / Network Planning |
| 26. | Anthony David Mkakwa | " | Senior Assistant Manager |
| 27. | Alfred Mugaisi | " | Executive Engineer |
| 28. | Rufus.K. Muigwa | " | Assistant General Manager |
| 29. | B.Edmunds Matheke Mulli | " | Senior Assistant Manager |
| 30. | Charles Githinji Munyori | " | Sectional Engineer |
| 31. | M.M.K. Muoka | KCCT | Lecturer |

| | | | |
|-----|------------------------|-------|---|
| 32. | David Musakwa | KP&TC | |
| 33. | Japhet Gikunda Muthuri | " | Senior Research Officer |
| 34. | Peter Ngara Mwangi | " | Senior Assistant Manager |
| 35. | Jobs Pius Mwangome | " | Assistant Manager |
| 36. | Elijah N.K. Ndegwa | KCCT | Lecturer |
| 37. | M.M. Ndeji | KP&TC | |
| 38. | Peter Ndiritu | " | Manager Telecommunications, Nairobi North |
| 39. | Ephraim Kamau Njoroge | " | Executive Engineer |
| 40. | G.G. Njorohio | " | Acting Manager |
| 41. | Joseph.G. Njuguna | " | Principal Research Officer |
| 42. | W.K. Nzioki | " | AG M/PPE/CN |
| 43. | Caleb Agwa Oboch | KCCT | Lecturer |
| 44. | Musa O.D. Odera | KP&TC | Telecommunications Controller |
| 45. | Richard L.Obuya Odwako | " | Principal Research Officer |
| 46. | W.N.O. Oguya | " | Manager, Switching Sys. Planning & Engg. |
| 47. | Simon Aginah Olawo | " | Senior Assistant Manager |
| 48. | Leonard Mware Oloo | KCCT | Lecturer |
| 49. | C.E. Oluoch | KP&TC | |
| 50. | Tom Mbadi Olwero | " | Executive Engineer |
| 51. | B.H. Omukuba | " | Senior Assistant Manager |
| 52. | Moses Rurigi | KCCT | Principal Lecturer |
| 53. | Eduard Samba | KP&TC | Project Planning & Engineering |
| 54. | J.S.W. Watakah | " | Assistant Manager |

2. タンザニア

| No. | [氏名] | [所属機関] | [現職] |
|-----|--------------------------|--------|---|
| 1. | Athman Amri | TPTC | Chief of External Plant Construction |
| 2. | Buda Omar Asha | " | Senior Technical Officer |
| 3. | Didier Joseph Bellege | " | Senior Sectional Engineer |
| 4. | Vincent Joseph W. Chacha | " | Assistant Engineer |
| 5. | Victor T. Dinho | " | Senior Engineer |
| 6. | Stephano Swai Furahini | " | Principal Executive Engineer |
| 7. | A.A.Abdallah Hatibu | " | Principal Telecommunications Controller |
| 8. | John Joseph | " | Assistant Engineer |
| 9. | O.A.M. Kadiva | " | Senior Technical Officer |

| | | | |
|-----|--------------------------|--|--|
| 10. | Mohamed Ladak Kazim | TPTC | Technical Officer |
| 11. | Godwin J. Karia | " | Assistant Engineer |
| 12. | Charles Kazuka | " | Chief International Operations & Marketing |
| 13. | Richard M. Kilanga | " | Senior Sectional Engineer |
| 14. | Joseph Samuel Kilongola | " | Principal Executive Engineer |
| 15. | John S. Kimbe | " | Senior Executive Engineer |
| 16. | B.J. Kipanea | " | Zonal Chief |
| 17. | Evatt A.C. Kuzilwa | " | Senior Sectional Engineer |
| 18. | Kassim Licheula | " | Senior Sectional Engineer |
| 19. | Theophrid Thomas Lijaji | " | Assistant Engineer |
| 20. | Lucas M. Lusaha | " | Senior Sectional Engineer |
| 21. | M.K. Lwiza | " | Chief Executive Engineer |
| 22. | Harold Jonathan R. Lyimo | " | Chief Executive Engineer |
| 23. | Hamza Mahine | " | Principal Sectional Engineer |
| 24. | Athmani H.J. Marijani | " | Zonal Telecommunications Manager |
| 25. | Seif Hamed Maryam | " | Senior Technical Officer |
| 26. | Prince Shagila Mashaushi | Amnesty International Tanzania Section | Executive Secretary |
| 27. | Fundi Omari Mazwazwa | TPTC | Assistant Engineer |
| 28. | Stanislaus Mbayo | " | Head / Engineering Standards |
| 29. | Habib A. Mcharo | " | Assistant Engineer |
| 30. | Jamally Ally Mgan zah | " | Senior Engineer, Resource Planning |
| 31. | P.M. Mghanga | " | Assistant Engineer |
| 32. | Edward Mhina | " | Senior Technical Officer |
| 33. | Frederick N.M. Mloka | " | Senior Executive Engineer |
| 34. | Wilfred E.K. Mnzava | " | Exchange Maintenance Engineer |
| 35. | Christopher L. Mollel | Chrisamu Sales & Export Agency Ltd. | Chairman / Managing Director |
| 36. | Ezrom A.S. Moshi | TPTC | Senior Executive Engineer |
| 37. | M Samatta Moshi | " | Assistant Engineer |
| 38. | Gibson J. Mpiziwa | " | Section Engineer |
| 39. | Daudi Mponzi | " | Assistant Engineer |
| 40. | Margareth E. Mponzi | " | Executive Engineer |
| 41. | G.M. Mtondo | " | Senior Sectional Engineer |
| 42. | E.J. Mutafungwa | " | Principal Management Analyst |
| 43. | Daniell M.P. Mutta | " | Principal Telecommunications Controller |

| | | | |
|-----|-------------------------|------|------------------------------|
| 44. | MacLean Obel Mwakatund | TPTC | Assistant Manager |
| 45. | Joseph H. Mwakibete | " | Principal Sectional Engineer |
| 46. | Raphael Faj Mwalulemile | " | Assistant Engineer |
| 47. | Atupele Mwambene | " | Executive Engineer |
| 48. | Omar Mussa Mwamwetta | " | Senior Technical Officer |
| 49. | George R. Nkondokaya | " | Assistant Engineer |
| 50. | J.K. Nkuba | " | Senior Executive Engineer |
| 51. | John D.S. Nyali | " | Senior Technical Officer |
| 52. | Danny Rwakilomba | " | Senior Sectional Engineer |
| 53. | George Daud Semfuko | " | Assistant Engineer |

QUESTIONNAIRE

PART I: FOR ALL THE SEMINAR PARTICIPANTS

1. Name (Given name first):
2. Age:
3. City of Residence:
4. Name of your organization:
5. Present post and brief description of your duties:

6. Is this seminar beneficial for your career? How?

As to the technical cooperation from Japan to your country...

7. What are the major technical difficulties in the field of telecommunications in your country?

8. What type of assistance do you think Japan can give to alleviate those difficulties? Check those which you consider necessary.

| | |
|--|--|
| <input type="checkbox"/> Training in Japan | <input type="checkbox"/> Dispatch of Experts |
| <input type="checkbox"/> Supply of equipment | <input type="checkbox"/> Other suggestions |

What kind? Why?

PART II: FOR EX-PARTICIPANTS IN JICA TRAINING PROGRAMME

9. Name and type of the training you participated in. (Circle a. or b.)
- a. Group Training _____
- b. Individual Training _____
10. Year of participation
11. Position and name of organization you belonged to at the time of participation.
12. List all the positions you occupied after you came back from Japan.
13. Has the training in Japan been useful for your job?
14. In what specific area are you making use of the results of the training in Japan?
15. Requests concerning follow-up activities by JICA.

JICA